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(1) (11) 19 Aug 67 (12) 92 p.

22 November 1967

SUBJECT: Operational Report-Lessons Learned, Headquarters, 25th Infantry Division, Period Ending 31 July 1967 (U) (6)

pwc p 66

TO: SEE DISTRIBUTION

(9) Operational rept for quarterly period ending 31 July 67.

1. Subject report is forwarded for review and evaluation by USACDC in accordance with paragraph 6f, AR 1-19 and by USCONARC in accordance with paragraph 6c and d, AR 1-19. Evaluations and corrective actions should be reported to ACSFOR OT within 90 days of receipt of covering letter.

2. Information contained in this report is provided to insure appropriate benefits in the future from Lessons Learned during current operations, and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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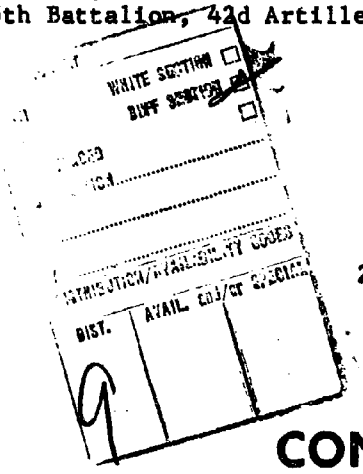

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DEPARTMENT OF THE ARMY
HEADQUARTERS 25TH INFANTRY DIVISION
APO San Francisco 96225

AVDCDH 19 August 1967

SUBJECT: Operational Report for Quarterly Period Ending 31 July 1967 (RCS CSFOR-65) (BC)

TO: SEE DISTRIBUTION

Operational Report for Quarterly Period (RCS CSFOR-65)
Location: Vicinity, CU CHI, CU CHI Base Camp (XT647153), RVN
Reporting Officer: Major General John C. F. Tillson III
Prepared by: Captain Howard C. Manning, CO, 18th Military History Detachment

1. (C) Significant Organizational Activities.

a. Operations.

(1) General. There were 11 major (Bn or higher) operations and 1405 small unit actions conducted by the 25th Infantry Division during this quarter. All major and 109 small unit actions resulted in enemy contact.

(2) FORT NISQUALLY (28 Nov 66 - 14 May 1967). The mission of the operation was to conduct operations to secure the area adjacent to the base camp of the 3rd Bde, 4th Inf Div at DAU TIENG and to eliminate VC influence in the unit's Tactical Area of Responsibility (TAOR). Operations from 1 - 14 May 1967 primarily consisted of daylight reconnaissance and night ambush patrols within 3000 meters of the DAU TIENG base camp. There was no significant contact.

Results of Operation FORT NISQUALLY were as follows: 28 VC Killed in Action (KIA), verified by Body Count (BC), 23 VC KIA possible (poss), 26 VC Prisoners (PW), 58 detainees. Captured and evacuated were: 23 individual weapons, 2 LMG, 1 calymore mine, 1 CHICOM RPG-2, 1695 rds ammo, 100 expended .30 cal links, 1 bayonet, 3 grenades, 30 punji stake: 36 tons of rice, 105 lbs pork, 325 lbs sugar, 41 lbs tea, 20 lbs shrimp 6 kg assorted food; 10 bicycles, 5 new bicycle frames, 3 bags bicycle parts; 1 pair jungle boots, 1 roll black material, 100 lbs assorted clothing; 300 ft electric wire, 2 FM radios, 4 batteries; 1 US gas mask, 1 large roll mosquito netting, 111 lbs documents, 11 rolls corrugated tin,

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20 gal kerosene, 30,000 Piasters, 150 lbs assorted medical supplies, 21 lbs epsom salts. Destroyed were: 10 AT mines, 32 AP mines, 29 hand grenades, 3 105mm casings, 3 155mm projectiles, 1 105mm projectile, 3 81mm rds, 1 M-79 rd, 3 rds CHICOM RPG-2, 33 CBU bomblets, 4 200 lb bombs, 1 750 lb bomb; 39½ tons rice, 1000 lbs beans, 1700 lbs peas, 3 lbs sugar, 1 gal grease, 2 canteens whiskey, 1600 lbs mullett; 7 sampans, 6 bicycles; 1 Bn size hospital, 11 VC base camp, 309 bunkers, 3 buildings, 115 foxholes, 32 huts; 310 ft electeic wire, 5 rolls barbed wire, 250 sheets tin, 1 grinding mill.

(3) ALA MOANA (1 Dec 66 - 14 May 1967). This operation was conducted in HAU NGHIA and BINH DUONG Provinces to destroy to destroy VC forces, supplies and base camps near the division base camp at CU CHI, and in the FILHOL Plantation, and to provide security for the CU CHI base camp and surrounding area. First and 2nd Brigades, 25th Infantry Division continued participation in Operation ALA MOANA employing local security operations, without significant contact until the termination of the operation on 14 May 1967. Results of Operation ALA MOANA were as follows: 381 VC KIA (BC), 558 VC KIA (poss), 25 VC PW, 652 detainees. Enemy equipment losses were: 94 small arms weapons, 5 crew served weapons, 56 artillery shells, 133 mines, 406 grenades, 7 mortar rounds, 12 bombs, 21,499 rounds of small arms ammunition, 181 booby traps, 87 cluster bomb units (CBU), 188 blasting caps, 17 anti-tank weapon rds, 289 sampans, 4 outboard (sampan) motors, 55 lbs medical supplies, 14 bicycles, 162 lbs documents, 2 oxcarts, 15 sticks TNT, 4 lbs clothing and 57 lbs explosives; 5 punji pits, 2,395 meters of trenches and 57 foxholes; 120,092 tons of rice, 2 tons of salt and 5 tons of food stuffs other than rice.

(4) JUNCTION CITY (22 Feb - 16 May 1967). This operation concluded using the Mobile Brigade Concept to continue offensive operations in War Zone "C" begun by the forces of the entire division. Operations from 1 May through 16 May were conducted by the 1st Brigade, 9th Infantry Division, which had been placed under operational control (OPCON) of the 25th Infantry Division. Significant contact occurred on 13 May when Fire Support Base (FSB) 11 at XT305495 was attacked by an unknown size VC unit and received over 100 rounds of 81mm and 82mm mortar fire with small arms (SA) and automatic weapons (AW) fire, resulting in one tank and one M151 ¼ ton truck being destroyed, 8 U.S. Killed by Hostile Action (KHA) and 30 more US Wounded in Hostile Action (WHA). The operation concluded on 16 May without further significant contact. Results of Operation JUNCTION CITY were as follows: 947 VC KIA (BC), 423 VC KIA (poss), 183 HOI CHANH (rallier under the CHIEU HOI Program), 18 VC PW, and 61 detainees, of whome 35 were civil defendants and 26 were innocent civilians. Enemy equipment losses were: There were 314 small arms weapons, 30 crew served weapons, 1,193 artillery shells, 156 mortar rds, 60 anti-tank weapon rounds, 331 mines, 559 grenades and booby traps, 41,482 rds of small arms ammunition, 120 bicycles, 25 sampans, 5,098 lbs of clothing, 1,058 lbs medical supplies, 8 radios, 4 telephones

2,500 feet of communication wire, 50 batteries, 1 head set, 1 morse key, 1 mulimeter, 2 tape recorders, 7 audio tapes, 1 antenna, 9 ox-carts, 2 printing presses, 10 generators, 12,643 gallons of fuel and 1,495 lbs of documents. Enemy facility losses were as follows: 3,471 fortifications, 1,060 structures, 25 tunnels, 250 foxholes and 249 trenches. Enemy Food Losses were as follows: 528 tons of rice, 15 tons of other foodstuffs (except rice), and 460 lbs of salt.

(5) MANHATTAN (23 April - 07 June 1967). The 25th Infantry Division as a part of IIFFORCEV began Operation MANHATTAN on 23 April with the objective of destroying VC forces and installations in the HO BO - BOI LOI - BEN CUI areas and along the SAIGON River in conjunction with other IIFFORCEV units. After IIFFORCEV concluded the operation on 11 May, the 25th Infantry Division continued Operation MANHATTAN as a division operation until 07 June 1967, employing the 1st and 2nd Brigades, 25th Infantry Division and 3rd Brigade, 4th Infantry Division. Search and destroy operations commenced in April continued. On 9 May, 2nd Brigade, 25th Infantry Division completed its participation in Operation MANHATTAN and returned to CU CHI Base Camp in preparation for the forthcoming Operation KOLEKOLE. On 10 May, 3rd Brigade, 4th Infantry Division completed its participation in Operation MANHATTAN and returned to the DAU TIENG Base Camp in preparation for the forthcoming Operations AHINA and DIAMOND HEAD. First Brigade, 25th Infantry Division continued operations and provided necessary security for extensive clearing operations conducted by the 65th Engineer Battalion, which employed the ROME PLOW, a modified bulldozer with a sharpened blade used for clearing densely vegetated areas. In addition necessary roads were constructed in the Area of Operations (AO). The clearing of the vegetation in the AO deprived the VC of the sanctuary they had long established throughout the area, especially in the HO BO and BOI LOI Woods. Significant results of Operation MANHATTAN were: 74 VC KIA (BC), 99 VC KIA (poss), 3 HOI CHANH and 19 PW. Enemy weapons and munitions losses were: 201 small arms weapons, 18 crew served weapons, 42 artillery rounds of ammunition, 671 mortar rounds of ammunition, 214 anti-tank weapons rds of ammunition, 293 mines, 901 grenades and booby traps, 400,543 rds of small arms ammunition, 168 cluster bomb units, 3200 blasting caps, 2300 feet of detonating cord, 1800 lbs of TNT and 2278 lbs of black powder. Enemy equipment losses: 34 sampans, 400 pounds of clothing, 443 pounds of medical supplies, 250 tons of rice, 5.5 tons of other foodstuffs, 398 pounds of documents, 12,760 feet of communication wire, 7 radios, 30 pounds of punji stakes, 17 pounds of tools, one telephone, 7 protective masks, 2 plows, 108 bicycles, 1 oxcart, 6 generators, 25 gals of CS agent and 6 outboard motors. Enemy facility losses: 461 structures, 1594 meters of tunnels, 1163 bunkers, 421 foxholes, 5635 meters of trenches, 7 base camps, 1 radio repair ship, 1 bicycle repair shop and 2 hospitals.

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(6) AHINA (13 - 18 May 1967). This operation was a search and destroy operation conducted in the east central portion of War Zone "C", bounded by XT6490, XT6450, XT5450 and XT6440. Its purpose was to engage and destroy VC/NVA forces known to be operating in the AO, and to destroy VC/NVA base camps and facilities throughout the area. Operations conducted in this AO from 1 - 5 April during Operation JUNCTION CITY indicated that further enemy facilities and forces would be located there if the AO were re-occupied. Therefore Operation AHINA was planned to exploit this intelligence. Enemy contact during the operation was limited to sniper fire and occasional contact with squad size VC forces. Extensive weapons, foodstuffs, and supplies were uncovered and destroyed which made the operation a success. Supplies captured included three trucks known to have been employed by the VC for resupply purposes. Operation AHINA was also significant for its employment of a light tactical raft for an unopposed crossing of the SAIGON River at XT459562 by mechanized infantry in conjunction with a heliborne assault by other infantry forces. Results of Operation AHINA were: 9 VC KIA (BC), 2 VC Killed by Air Force (KBAF)(poss). Enemy equipment evacuated included: 3 AK-47 1 SKS carbine, 1 RPG-2 rocket launcher, 1 CHICOM LMG-type 56 w/magazine and 100 rds ammunition, 1 M1 rifle barrel-receiver group, 8000 brass mine adapters, 8000 detonator components, 100 feet electrical cord, 200 smooth metal cylinders-believed to be pistol barrels; 7650 lbs polished rice, 330 bags unpolished rice (200 lb bags), 7 cows; 1 truck-Willys panel, 1 truck-Landrover type, 70 lbs clothing, misc machine parts-weapons molds, 1 fire extinguisher w/DDT spray, 1 single cylinder gas engine, 20 springs-3" in diameter 10" long, 1 outboard engine-9HP Briggs & Stratton-w/misc tools and spare parts. Enemy equipment destroyed: 90 rifle grenades, 63 frag grenades, 11 anti-tank mines, 1 RPG-2 rd w/2 fuzes, 18 howitzer rds - believed to be Japanese pack-howitzer rds, 1 81mm rd, 100 rds .30 cal, 150 rds 5.56mm, 4600 7.62 rds (short) for AK-47, 1400 7.62 rds misc size, 15 rifle stocks, 12 magazines - 30 rd "banana" clip for AK-47, 1 shotgun, 8 lbs black powder, 4 M-79 rds, 1 trip flare (US), 1 anti-personnel mine 8" diameter, 6 CBU bomblets, 300 lbs cordite, 5 casings for shape charge, 9 60mm mtr rds, 1 shape charge - 10 lb, 15 lbs batteries, 1 metal lathe, 1 drum - 55 gal; 54 huts (includes 4 kitchens & 4 classrooms), 42 bunkers w/overhead cover, 1200 meters trench w/foxholes; 10 tons rice, 9 lbs peas, 50 lbs peanuts, 1 hog (killed by Airstrike), 3 quarts cooking oil, 12 cans (5 gal ea) coconut oil, 30 cans (2 gal ea) beans; 1 truck 3/4T Dodge - WWII type (damaged from previous airstrike), numerous pots and pans - cooking utensils, 2 fish nets, 8 bicycles w/misc repair parts, 2 sampans, 1 winch w/30' cable, 2 hammocks, 2 gal gasoline, 1 gal kerosene.

(7) KAWELA (11 June - 25 June 1967). This operation was begun by the 25th Infantry Division as a follow up to Operation MANHATTAN, to exploit intelligence reports of VC activity along the upper SAIGON River vic XT5632 and in the TRI TAM District XT5836. It

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employed the 1st Brigade, 25th Infantry Division and the 3rd Squadron, 4th Cavalry to search and destroy VC forces and installations in an AO thought to house elements of Military Region (MR) IV, and that contained supply routes that continued to the FILHOL Plantation immediately north of the Division base camp at CU CHI and to the HO BO Woods beyond them. During the operation no main force units were encountered. Contact was limited to sporadic sniper activity from local guerrillas. The operation was begun with two crossings of the SAIGON River. One a non-illuminated, non-support crossing using aluminum foot bridges and light tactical rafts. It was unopposed while another diversionary crossing was made by mechanized units to the south. Although contact was negligible, extensive amounts of enemy munitions and equipment were seized. Results of Operation KAWELA were: 38 VC KIA (BC), 26 VC KIA (poss), VC Killed by Air strikes (KBA) (BC) 2, VC KBA (poss) 25. Enemy equipment captured was: 58 rds of SA ammo, 2 RPG-2 launchers, 22 lbs of medical supplies, 12 lbs of documents, 42 rds of SA ammo, 5 AK-47 rifles, 1 pistol belt, 1 combat pack, 5 bags of CS-1, 9 tape recordings, 1 CHICOM carbine, 7 RPG-2 rds, 9.2 tons of rice, 1 CHICOM carbine, 1 cannon barrel, 2 bicycles, 1 82mm mortar w/base plate, 1 grinding machine, 2 grenades, 1 dairy. Equipment destroyed: 9 sampans, 6 AT mines, 305 bunkers, 82 military structures, 12 bicycles, 29 tons of rice, 1,257 rds of SA ammo, 3 claymores, 2 VC protective masks, 55 AP mines, 1 500 lb bomb, 23 CBU's, 66 trenches, 29 tunnels, 54 grenades, 14 sampans, 1 60mm rd, 1 500 lb bomb, 1 .50 cal breech, 1 .30 cal pistol w/o barrel, 1 .50 cal MG tripod, 3½ lbs of explosives, 3 booby traps, 3 stoves, 1 RPG-2 rd, 1 raft, 6 CBU's detonators.

(8) SABER THRUST 422 - 20 April, 22 May - 2 June, 5 - 8 June, 2 - 10 July 1967). This operation was conducted by the 3rd Squadron, 4th Cavalry as an intermittent security operation. SABER THRUST was begun on 7 April and conducted in five phases as separate security and patrolling operations in the vicinity of the CU CHI base camp, and along the Main Supply Route (MSR). During this reporting period it was expanded to include engineer security, night ambushes, Long Range Reconnaissance Patrols and employment of a base camp reaction force. Operation SABER THRUST VI was conducted from 22 May through 2 June throughout the CU CHI and TRANG BANG Districts of HAU NGHIA Province, to include the FILHOL Plantation and the HO BO Woods. SABER THRUST VII was conducted from 5 - 8 June in an AO centered on XT2839 northwest of GO DAU HA. SABER THRUST VII was conducted from 2 - 10 July 1967 again throughout the CU CHI and TRANG BANG Districts of HAU NGHIA Province. For the extent of enemy contact see paragraph 1e, Intelligence. Results of the three phases of Operation SABER THRUST were: 17 VC KIA (BC), 28 VC KIA (poss), 1 VC WIA, and 9 VC PW. Enemy equipment captured was: 10 SA wapons, 10½ lbs of documents, 800 lbs fish, $200 in SVN currency, 1 - .50 cal mount, 1 - 4.2mm mortar tube, 1 carbine, 1 grenade. Enemy equipment and foodstuffs destroyed were: 22,400 lbs rice, 500 lbs fish, 51 fortifications, 34 tunnels, 27 structures, 1 sampan, 15 BT's, 2 AP mines, 19 grenades, 2500 rounds of assorted SA ammo, 5 road blocks.

(9) AKUMU (08 July 67 - 26 July 67). Purpose of the operation was to conduct a cordon and search and pacification operation in PHU HOA DONG Village (XT715195), BINH DUONG Province. This village is located five kilometers to the northeast of the division's base camp at CU CHI, and at the eastern edge of the FILHOL Plantation. The cordon and search and pacification operations were conducted jointly with the 7th ARVN Regiment, located in PHU HOA DONG. First Brigade, 25th Infantry Division, with 3rd Squadron, 4th Cavalry (-) under its operational control (OPCON), was the control headquarters for the execution and continuation of the cordon while 7th ARVN Regiment controlled the execution of the search and clearing of the village interior. Intelligence prior to the operation indicated the presence of elements of the 1st Bn, Military Region IV (MR IV), the 7th Bn, CU CHI District and the 2nd Bn, GO MON District in the area. The strength of each battalion was 200 - 300 men. In addition a VC local force platoon of 25 men was known to operate in the area. Considerable VC activity in the adjacent FILHOL Plantation and HO BO Woods was known to be influential in the activities in the village and surrounding areas. VC fortifications, installations, booby traps and mines were found throughout the operation. Contact with VC forces was light for the first days of the operation, consisting of sporadic sniper fire from groups of 2 or 3 VC. Then on 13 July contact increased markedly. At 130148 hours, Co B, 4th Bn (mech), 23d Inf received 10 rds of RPG-2 fire vic XT686216, damaging 2 Armored Personnel Carriers (APC), and resulting in 1 US KHA, 8 US WHA, 3 VC KIA (BC), 2 VC KIA (poss) and the capture of 1 RPG-2 launcher with two rounds. At 130142 hours a four man Listening Post (LP) from Co B, 4th Bn (Mech), 23d Inf engaged 3 VC at XT687212, resulting in 3 US WHA and unknown VC losses. Finally at 130225 hours, Co A, 4th Bn (Mech), 23d Inf received sniper fire at XT702208, resulting in 1 US WHA. At 131440 hours Companies B and C engaged an unknown VC force at XT664218 resulting in 2 US WHA. There was light contact until 18 July when Co B, 4th Bn (Mech), 23d Inf received 23 RPG-2 rounds and 82mm mortar rounds at XT669198. Fire was returned resulting in 3 VC KIA (BC), 1 VC KIA (poss), 1 US KHA and 15 US WHA. Contact was believed to be with 2nd Co, 1st Bn, MR IV.

There was no further significant contact until 22 July, when 2nd Bn, 14th Inf Recon Platoon engaged 2 VC at XT749159 after they were spotted by a Forward Air Controller (FAC). Two VC were KIA (BC) and an AK-47 rifle and a caliber .45 pistol captured. Further contact was again negligible until the termination of the operation.

At the start of the operation a hamlet festival was conducted by Civil Affairs team which explained the purpose of the US presence in the village to over 19,000 persons. MEDCAPS and Catholic services (in the village church) were held throughout the operation. Operation AKUMU challenged the VC in a formerly secure stronghold, and greatly diminished VC influence "at the back door" of Camp CU CHI. In addition VC

supply and movement routes through the FILHOL Plantation to the HO BO Woods were severly disrupted. Results of the operation were: VC KIA (BC) 15, VC KIA (poss) 11, HOI CHANH 1. Enemy equipment destroyed: 237 bunkers, 74 tunnels, 49 foxholes, 970 meters of trench, 55 punji pits, 43 military structures, 22 AT mines, 27 AP mines, 15 sampans, 4 82mm mortar rds, 2 60mm mortar rds, 16 CHICOM grenades, 5 rifle grenades, 2 US claymores, 9 US hand grenades, 2 docking sites, 2 misc drums, 57 rds CHICOM carbine ammo, 1 rd M16 ammo, 2 stick mines, 2 lbs clothing, misc, 15 lbs rice, 2 105 canister, 1 hat. Enemy equipment captured: 1,198 rds SA ammo, 3 belts, pistol, 1 lb documents, 1 sign-minefield, 1 flashlight, 1 compass, 1 pr black gloves, 1 poncho (VC), 3 RPG-2 rocket launchers, 1 RPG-2 booster, 12 pr sandals, 1 hammock, 1 pr trousers, 1 M1 rifle - cal .30, 1 canteen with cup, 2 masks-protective, 2 57 RR containers, 1 bag-canvas, 15 M79 rds, 2 belts with clip for AK-47 rifles, 1 82mm mortar tube and elevating mechanism, 2 .45 cal pistols, 1 magazine-AK-47, ½ lb med supplies, 1 lb clothing, 560 piastres, 1 holster-.45 cal, 1 canteen cover, 1 magazine .45 cal, 1 CHICOM rifle, 1 CHICOM 7.62mm red stock carbine.

(10) The 25th Infantry Division MONSOON CAMPAIGN began on 14 May 1967. Within the division TAOR, three operations are being conducted: Operation KOLEKOLE, BARKING SANDS and DIAMOND HEAD. The mission of the division in the MONSOON CAMPAIGN is to conduct offensive operations with emphasis in populated areas, to destroy VC/NVA forces and installations, to secure major lines of communication (LOC's) to support the Government of Vietnam (GVN) Revolutionary Development Program and to reinforce Free World Military Assistance Forces and GVN forces as directed.

(a) KOLEKOLE (14 May 1967 - continuing). This operation is a search and destroy operation conducted by 2nd Brigade, 25th Infantry Division in the DUC HOA, BAO TRAI, HIEP HOA and LOC GIANG Areas and along the ORIENTAL River (SONG VAM CO DONG). The brigade conducts EAGLE FLIGHTS and airmobile operations based on current intelligence. Cordon and search outposting, and County Fair operations are conducted in conjunction with 25th ARVN Division, Civilian Irregular Defense Groups (CIDG), Regional and Popular Forces. Significant actions were the relief of an 80 man CIDG force encircled by a VC company on 16 May west of the ORIENTAL River (XT4403), by elements of the 1st and 2nd Bn, 27th Infantry. Airmobile assaults into the area resulted in prolonging contact from 1600 to 0130 hours 17 May. Results were 27 VC KIA (BC) and 36 more VC KIA (poss) with only 2 US KHA and 9 more WHA. There was intermittent contact throughout June and July, particularly along the AN HA Canal and at LOC GIANG (XT428155) along the ORIENTAL River. Engineer operations in conjunction with KOLEKOLE have reopened Highway 10 from DUC HOA to BAO TRAI, the HAU NGHIA Province capital. This improved the GVN's authority and control and assisted the 25th Infantry Division's overland reaction capability, as well as allowing civilians to move local products to

new markets. Engineer operations continue to improve Highway 10 and the bridge west of TRANG BANG (XT4519). Results of Operation KOLE-KOLE to date are as follows: 1338 VC KIA (BC), 226 VC KIA (poss), 45 VC PW, 21 HOI CHANH and 290 detainees. Enemy material captured was: 168 lbs documents, 2 Russian rifles, 3-105mm rds, 20 M1 carbines, 1-.38 pistol, 4 shotguns, 16 CHICOM carbines, 2 VC packboards, 3-55 gal drums of CS, 4-.45 cal pistols, 19 M1 rifles, 5 M3 SMGs, 2 BARs, 1 French LMG, 8 AK-47s, 114 batteries, 5 PRC-10 radios, 2 RPC-2 rds, 7 AT mines, 52 lbs medical supplies, 127 lbs of clothing, 1-20mm cannon, 2255 SA rds, 1-57mm recoilless rifle, 227 SA magazines, 1 sniper rifle, 1 Mauser rifle, 2 grenade launcher adapters, 12 claymores, 17 CHICOM grenades, 1 M79 launcher, 150 US blasting caps, 3 claymore generators, 30 yds of bandages, 5 SMG magazines, 1 Thompson SMG, 420 meters of wire, 92 grenades, 50-.50 cal rds, 45 prs of black uniforms, 60 hammocks, 1 commercial radio, 1-60mm mortar rd, 1 lb C-4, 2 -20mm rds, 100 ft claymore wire, 1 M2 carbine, 2 M14 rifles, 1-75mm RR rd, 2 M16 rifles, 2 bolt action rifles, 3 homemade rifles, 1 wallet, 1 VC flag, 1 gasoline generator, 400 pcs chinaware, 1 BAR, 1 AK-47, 2 US carbines, 4500 lbs of rice, 2 M2 carbines, Enemy material destroyed: 2633 bunkers, 483 military structures, 203 tunnels, 14 trenches, 226 sampans, 187 AP mines, 72 AT mines, 51 booby traps, 60-82mm rds, 58-60mm rds, 11-57mm rds, 3-175mm rds, 17 M79 rds, 60-155mm rds, 30-105mm rds, 635 grenades, 923 RPG-2 rds, 5305 lbs of rice, 66 CBUs, 2 lbs clothing, 4 small rockets, 2 ponchos, 2 oxcarts, 7622 SA rds, 8-4.2" rds, 1 typewriter, 1-500 lb bomb, 4 VC protective masks, 75 lbs TNT, 12 rifle grenades, 1 foot bridge, 2 LAWs, 2 motorized sampans, 1 claymore, 100 lbs nitrates, 800 lbs cement, 7000 chopsticks, 1 commercial radio, 200 blasting caps, 5 cans assorted fuzes, 14 AT mine casings, 50-2.75" rockets, 7 bicycles, 1 flare device, 3 grenade detonators, 5-250 lb bombs, 2-75mm rds, 10-82mm rds, 2-2.5" rockets, 1 homemade carbine, 50 lbs black powder, 8 AT mine fuzes, 87 grenade casings, 48 grenade fuzes, 32 SA magazines, 6 CHICOM rifle bolts, 100 AT mine plungers, 3 AT mine detonators, 1-3.5" rocket, 1 micrometer, 1 shaped charge, 1-60mm mortar tube, 4-20mm rds, 4 trip flares, 8-2.75" rocket warheads, 16-.50 cal rds, 500 ft claymore wire, 200 booby trap springs 9 claymore adapters, 3 rifle stocks, 1 knife, 5 mine molds, 1 VC pack 1 bangalore torpedo, 2 rifle grenade launcher adapters, 200 lbs of fertizer, 3 fuzes, 4 hand grenade threaders, 1000 lbs of charcoal, 200 lbs of salt.

(b) BARKING SANDS (18 May 1967 - continuing). This operation is being conducted by the 1st Brigade, 25th Infantry Division for the pacification of CU CHI and TRANG BANG Districts in HAU NGHIA Province and in PHU HOA District of BINH DUONG Province. Counter guerrilla warfare techniques are being employed to include saturation patrolling, "Checkmates" (road blocks in unannounced locations to check for VC personnel or supplies being moved by surface transportation), bushmaster and cordon and search operations in cooperation with Regional and Popular Forces, and with ARVN units. Engineer units

upgraded Highway PA, leading from CU CHI to PHU CUONG, the capital of adjacent BINH DUONG Province. Daily convoys now run between these locations.

In addition to pacification missions, numerous small unit operations have been staged from dispersed battalion or company size bases throughout the district which have allowed the US units to limit VC capability to move freely during night or day, and therefore VC control of the AO has been reduced. A "Buddy" operation (conducted with the PHU DUC PF and the 494th RF Co), that illustrates the type of operations employed, was conducted on 19 June after intelligence was received through the Combined Operation Center (COC) at TRANG BANG that a VC squad was operating vic XT5130. Through three contacts that day the squad was eliminated, resulting in 5 VC KIA (BC), 3 VC KIA (poss) and 2 VC PW. These operations are continuing. Results of Operation BARKING SANDS to date are as follows: 115 VC KIA (BC), 294 VC KIA (poss), 9 VC PW, 1 HOI CHANH and 12,346 detainees. Enemy material captured was: 48 lbs documents, 6 CHICOM rifles, 6 AK-47s, 7 CHICOM carbines, 1 pistol, 4 RPG-2 rds, 12,000 lbs rice, 2 M1 carbines, 15 lbs clothing, 1 can of 16mm film, 925 SA rds, 2 - 57mm RR containers, 2 Russian carbines, 2 batteries, 2 claymores, 2 sampans, 1 commercial radio, 2 Mauser rifles, 300 meters claymore wire, 1 US protective mask, 1 LAW, 5 homemade blasting caps, 23½ lbs medical supplies, 30 M79 rds, 2 vials penicillin, 4 signs, unk amt medical records & medical booklets, 1 tunnel complex map, unk amt bottles & medicine vials, 1 Thompson SMG, 1 Russian semi-automatic rifle, 1 RPG-2 booster, 1 notebook, 3 wallets, 1 M1 rifle, 1 M79 protective mask, 1 M60 MG, 2-.45 cal pistols, 2 homemade rifles, 1 9mm CHICOM pistol, 1 VC protective mask, 560 piasters, 1 holster, 1-4.2" tube w/elevating mechanism, 24 VC flags, 1 canvas bag, 380 gals of fuel, 700 CHIEU HOI pamphlets. Enemy material destroyed was: 1157 bunkers, 576 military structures, 236 tunnels, 19 trenches, 74 AT mines, 58 booby traps, 46 AP mines, 8 claymores, 25-81mm rds, 8-82mm rds, 18-60mm rds, 3-75mm rds, 3-175mm rds, 12-105mm rds, 13-155mm rds, 10-RPG-2 rds, 272 grenades, 2-4.2" rds, 42 sampans 3 bicycles, 19 CBUs, 23 bombs, 504 lbs clothing, 3150 lbs rice, 1-8" rd, 17,411 SA rds, 1 shaped charge, 14 M79 rds, 145 lbs TNT, 50 lbs propaganda, 1 CHICOM claymore, 2 lbs bandages (soiled), 1000 ft commo wire, 2 RPG-2 chargers, 20 stick mine fuzes, 3 PPS41 Soviet SMGs, 2 unk mines, 1-81mm firing table, 200 sandbags, 2 concertina (rolls), 1-750 lb bomb casing, 1 Arty flare.

(c) DIAMOND HEAD (18 May 1967 - continuing). This operation is being conducted by the 3d Brigade, 4th Infantry Division from its base camp at TAY NINH. Its mission is to conduct search and destroy operations in TAY NINH Province, cordon and search operations in the MICHELIN Plantation, and security and reinforcement missions in the TAY NINH and PREK KLOK Areas. An additional mission is to provide necessary security to its base camp at DAU TIENG. Search and destroy operations have resulted in the discovery of supply caches, and

intelligence reports indicate the local VC in the TAY NINH and DAU TIENG areas are finding it increasingly difficult to effect resupply. However, terrorist incidents of assassination and kidnapping (in and around DAU TIENG, and the mortaring of DAU TIENG base camp) have increased. This is due, in part at least, to the detachment of one battalion of the 3rd Brigade, 4th Infantry Division to operate in Operation UNION TOWN outside the 25th Infantry Division's TAOR, as well as other times the brigade has left DAU TIENG. One battalion conducted security operations for the DAU TIENG and TAY NINH base camps exclusively, throughout the month of July. Buddy operations were also conducted during July with eight companies of RF, PF and CIDG forces. Engineer units are upgrading the road from TAY NINH to SUOI DA leading to War Zone "C", which will increase the reaction capability of the 3rd Brigade (particulary its mechanized units) and make the road available for civilian use. Results of Operation DIAMOND HEAD to date are: 40 VC KIA (BC), 92 VC KIA (poss), 4 VC PW, 1 HOI CHANH and 174 detainees. Enemy material captured was: 2 P38 pistols, 2 CHICOM carbines, 43½ lbs documents, 58,030 lbs rice, 1 unk weapon, 1 shotgun, 2 Mauser rifle, 10 AK-47s, 1 tractor, 1 RPG-2 rd, 1 AT mine, 75 lbs medical supplies, 463 SA rds, 1 CHICOM rifle, 6 bicycles, 230 lbs food, 8 cans cabbage, 2 cans oil, 2000 lbs fertilizer, 2 notebooks, 1 M1 rifle, 1 commercial radio, 2 pack of assorted medical supplies, 6 CBUs, 1 claymore, 1 VC training schedule, 1 book, 1 M79 launcher, several signal instruction manuals, 10 cases of cream. Enemy material destroyed was: 1152 bunkers, 650 military structures, 18 trenches, 9 tunnels, 6 bridges, 16 AT mines, 7 AP mines, 62 booby traps, 10-60mm rds, 9-57mm rds, 2-75mm rds, 3-105mm rds, 4-155mm rds, 2 RPG-2 rds, 1-250 lb bomb, 7 oxcarts, 40 lbs clothing, 30 lbs black powder explosives, 6 mines, 16-82mm rds, 16 sampans, 1 ammo casting, 1-500 lb bomb, 7 large storage tanks, 1 lb propaganda, 47 grenades, 902 SA rds, 46,250 lbs rice, 1 rice polishing machine, 3 VC protective masks, 18 bicycles, 900 lbs of cement, 3 CBUs, 7-81mm rds, 1100 lbs fertilizer, 301 trip flares, 6 claymores, 1 hand flare, 17 M79 rds, 1 voltage converter (200 amp), 2 blasting boxes, 20 gal cooking oil, 1 LAW, 55 gals diesel fuel, 1-8" rd, 2 metal silhouette targets, 1 RPG-2 fuze.

b. Artillery Support. During the quarter Division Artillery fired 105,551 rounds in support and 139,871 rounds on Harassement and Interdiction (H&I) missions. Included in these totals were rounds fired in support of ARVN operations and/or outposts under attack.

c. Air Support. There were 2,684 sorties during the quarter flown in support of 1,254 missions with the following results: 67 VC Killed by Air Force (KBAF)(BC), 373 VC KBAF (poss). In addition, 295 VC structures, 1740 bunkers, 59 sampans, 3 tunnels, 55 caches and 11 bridges were destroyed. There were 42 secondary explosions and 196 secondary fires.

d. Army Aviation. During the period 1 May to 31 July 1967

13 there were 3,846 sorties, 1,577 combat missions, 1,89[illegible] passengers carried and a total of 1,655 hours flown. Armed Helicopters expended 549,970 rounds of 7.62mm machine gun ammunition, 4,305 rounds of .50 cal machine gun ammunition, 90 rounds of 5.56mm ammunition, 3,853 rounds of 40mm grenades and 1,975 aerial rockets in support of combat operations. In addition, 138 sorties and 90 hours were flown using the Manpacked Personnel Detector E63 (commonly called the "People Sniffer", modified for use in the UH1D helicopter), accompanied by another UH1D with spotlights ("Firefly") and a Light Fire Team (two more armed UH1B). These flights scouted for VC, detecting them by the ammonia produced in human perspiration and by the carbon produced by their camp fires. These missions resulted in the destruction of 24 structures, 13 sampans, 29 VC Killed by Army Air (KBAA) (BC), 65 VC KBAA (poss), 2 VC PW and 2 VC WIA.

e. Intelligence.

(1) VC Activity.

(a) General: VC activity consisted primarily of low level incidents directed toward delaying security operations in support of Revolutionary Development; and acts of terrorism aimed toward intimidating the civilian population to resist pacification and the upcoming elections. No significant contacts with NVA units have occurred since the withdrawal of Division elements from War Zone "C".

(b) VC Tactics.

(1) The VC have chosen to separate into smaller groups and conduct harrassing attacks against RF, PF and RD activities rather than concentrating large forces; however, they may concentrate forces if the likelihood of a quick victory exists. An example was an attack on PHOUC HIEP by elements of the 1st and 7th Bn's MR IV on the night of 18 July. A force of approximately Bn (-) size launched a coordinated ground and mortar attack on PHOUC HIEP (vic XT563167) with a blocking force in the vicinity of TRUNG LAP (XT5921). Reaction by US artillery and air power suppressed the mortars and broke up the attackers before they had an opportunity to exploit their initial momentum. Another attack occurred on the morning of 15 July when a platoon of the 2nd Bn, 22d Inf was attacked in conjunction with a coordinated attack on PHUOC HOA (RF) outpost. Mortars and recoilless rifles were fired on the outpost immediately prior to an assault by approximately two companies. The VC overran the outpost resulting in 16 ARVN KIA, 30 ARVN WIA and 30 ARVN MIA, as well as capturing a 60mm mortar and many small arms. Known VC losses were 2 KIA (BC). During their withdrawal the VC engaged the 1st platoon, A Co, 2nd Bn, 22d Inf (M). On making contact, the VC engaged the platoon with mortars, recoilless rifles, RPG-2s and small arms. Results: 2 US KHA and 16 US WHA. VC losses from this contact are unknown.

(2) Frequent incidents of assassination, kidnapping, mining and psychological warfare directed toward the civilian population were noted during the period. The effort appears to be directed toward intimidation rather than for political or geographical gains.

(3) The primary enemy initiated incidents involving U.S. Forces were the mortar attacks on CU CHI and DAU TIENG base camps. At 2328 24 July the DAU TIENG base camp received an attack by 82mm mortars which lasted for about 11 minutes resulting in approximately 70 rounds of 82mm HE ammunition impacting inside the base camp and 30 rounds outside the perimeter. The primary target appeared to be the airstrip. This attack resulted in 50 WHA (17 of which required dust-off) and 1 civilian WHA. One aircraft was destroyed and 24 received substantial damage. Other damage included a fire truck, a wheeled wrecker, 8-3/4 ton trucks, an RTT Van, and a 15 kilowatt generator. In addition numerous tents had to be salvaged as a result of damage received during the attack. A sweep of the suspected mortar position on 25 June located four mortar positions in the vicinity of a village approximately 2 kilometers morthwest of the base camp. Another incident involving U.S. Forces was the mortar attack on CU CHI base camp at 2135 13 July. Sixteen rounds of 82mm mortar HE ammunition were received, resulting in 15 US WHA. All rounds impacted in less than one minute. No contact with the attacking force was made.

(4) During friendly operations the VC avoided contact of conducted delaying actions. An example occurred on 12 July when the 1st Bn, 27th Inf and 2nd Bn, 27th Inf made contact with an unknown size force vic XT405145 during heliborne assault operations. The VC conducted a strong defense against the assaulting force from dug in and covered positions causing moderate casualties among the US troops and damaging five helicopters during the first day. Under cover of darkness, the VC exfiltrated and escaped.

(2) Conclusions.

(a) The VC continue to be forced from base camps and supply areas by friendly operations resulting in an increase in the amounts of supplies denied the enemy. Because of continued military pressure a greater number of the VC have chosen to rally under the CHIEU HOI PROGRAM. This has been particularly true in HAU NGHIA Province where 556 HOI CHANHs were received during May, June and July. An analysis of this trend shows that, by far, the greatest portion of these HOI CHANHs were local gurrillas. Under the present operation plans, continued pressure will be applied in the local area and may result in additional HOI CHANHs and additional destruction of base areas.

(b) The presence of US Forces in the Division TAOR will continue to give the population confidence in GVN's ability to protect them. Additional construction, improvement, and repair of LOC's will allow a greater number of civilians access to areas under government control. Conversely, areas under VC control are more readily accessible to allied troops and supporting forces.

(c) Enemy losses in manpower, facilities and equipment are expected to reduce the effectiveness of VC units in the FILHOL

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Plantation, the LOC GIANG area, and the HORSESHOE area of the ORIENTAL River.

f. Logistics.

(1) Class I Supply - (25th Supply and Transport Battalion)

(a) Status.

	"A" RATIONS	"C" RATIONS
(1) Stockage objectives (days)	5	10
(2) On hand (days)	3	10

(b) Fresh fruits and vigetables were received from Class I point, SAIGON.

(c) Ice Cream:

(1) Cycle of Issue 3 times per week.
(2) Gallons per week from SAIGON - 1,200
(3) Gallons per week from CU CHI - 1,100

(d) Average amount of ice issued daily:

(1) Potable - 131,920
(2) Non-Potable - None

(2) Class II & IV (25th Supply and Transportation Bn)

(a) Additions to ASL during quarter - 159
(b) Total lines on ALS - 949

(3) Class III (25th S & T Bn)

(a) Consumption rate.

	DAILY	QUARTERLY
(1) Mogas	15,000	1,365,465
(2) Diesel	17,000	1,576,456
(3) JP4	19,000	1,735,765
(4) Avgas	1,300	120,370

(b) In the Class III Yard a covered storage area for packaged products has been completed. Work is scheduled to begin soon on conversion of two square berms to rectangular to accomodate two new JP4.

(c) Class III Supply remained fairly constant during the quarter. Average daily issue increased from 11,794 gallons to 15,000 gallons for Mogas from 14,347 to 19,000 gallons for JP4. Daily decreases in issue was noted for diesel and Avgas from 23,504 to 17000

and from 1,505 to 1,300 gallons respectively.

(4) Services (25th S & T Bn)

(a) Contract Laundry - 9,505 bundles
(b) QM Bath unit: Extensive support was given to the 1st Battalion, 5th Infantry (Mech) and to the 4th Battalion, 9th Infantry during field operations during the quarter.

(1) Total showers for quarter - 44,513
(2) Average number of showers daily - 1,464

(c) Graves Registration:

(1) Deceased US personnel processed during the quarter - 150.

(2) Deceased RVN personnel processed during the quarter - 32.

(5) Transportation (25th S & T Bn)

(a) Mileage driven:

(1) Total - 221,604
(2) Average Daily - 2,462

(b) Tonnage moved:

(1) Total - 8,906
(2) Average Daily - 98.6

(c) Troops moved by convoy:

(1) Total - 308
(2) Average daily - 3.4

(d) Personnel moved locally by bus:

(1) Total - 5,188
(2) Average daily - 56.2

(e) Troops hauled (Pass Truck)

(1) Total - 3,368
(2) Average daily - 56.2

(6) Maintenance (725th Maintenance Battalion)

(a) The following maintenance requests were completed by this battalion during the reporting period:

ITEM	MAY	JUNE	JULY	TOTAL
Wheel Vehicles	174	325	392	891
Track Vehicles	115	184	114	413
Small Arms	2622	561	628	3811
Artillery	118	159	248	525
Chemical	24	18	16	48
Refrigeration	40	85	49	174
Engineer	279	314	259	842
Signal	1970	2484	2418	6872
Fire control	229	331	342	902
Office machines	146	213	197	556
Aircraft	146	139	146	431

(b) During this reporting period, the maintenance and supply mission of this battalion has been influenced by the following factors:

(1) Repair parts availability.
(2) Geographical location (to include weather and terrain characteristics).
(3) Introduction of new equipment and obsolescence of others.
(4) Facilities.

(7) Medical Support. (25th Medical Battalion)

This unit supported Division and non-divisional units with medical service and supplies.

(a) Medical totals:

(1) Patients seen - 10,543

a Disease - 5,723
b Non-battle injuries - 1,781
c IRHA - 437
d Other (ARVN, VC, VN, Transfers - 2,602)

(2) Lab tests - 3,723
(3) Immunizations - 5,567
(4) Prescriptions filled - 9,936

(b) Dental patients seen - 2,430

(1) Dental Examinations - 1,764
(2) Other (extractions, etc.) - 666

(c) Supply and Service.

(1) Line items issued - 5,027
Short tonnage total - 11

(2) MEDCAP line items issued - 2,176
Short tonnage total - 4.6

(3) Bulk pharmacy items issued - 9,072
(4) Prescriptions filled (to 30 June, after this date all prescriptions were filled by A & D) - 6,575
(5) Eyeglasses ordered (pairs) - 622
(6) Maintenance work orders received - 84

a Work orders completed - 78
b Work orders at 32 Medical Depot - 3
c Work orders awaiting parts - 2
d Work orders not completed - 1

(8) Transportation Office (25th DISCOM)

(a) Highway continues to be the primary mode of transportation for the resupply of CU CHI, TAY NINH and DAU TIENG base camps. Following is a breakout of regular resupply convoys operated in the division area:

(1) CU CHI - SAIGON convoys.

a Total convoys - 202
b Number of convoys per day - 2
c Total vehicles - 8,176
d Number of vehicles involved in unit distribution - 3,224

(2) On 1 May Route 1 between SAIGON and CU CHI was reclassified GREEN. During the reporting period 20,827 vehicles moved over the MSR south individually or in groups smaller than convoy size.

(3) Convoys from SAIGON/CU CHI to TAY NINH.

a Total convoys - 176
b Number of convoys per day - 2
c Total vehicles - 22,975
d Vehicles by unit:

1 1st Log Command - 12,296
2 25th Div & attached units - 6,908
3 1st Inf Div - 57
4 4th Inf Div - 1,226
5 9th Inf Div - 244
6 PHILCAG - 910
7 Other - 4

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(4) During the reporting period 2,893 vehicles from the 25th Inf Div moved over the MSR to TRANG BANG and GO DAU HA in support of operations north of CU CHI.

(5) TAY NINH and DAU TIENG convoys:

a Total convoys - 176
b Number of convoys per day - 2
c Total vehicles - 7,931

(b) Special airlift dates for the quarter is as follows:

MISSION	ACFT	PRIORITY	SORTIES	PASSENGERS	CARGO (lbs)
1	C-7A	1	7	130	10,000
2	C-7A/C-123	1	4	153	- -
3	C-123	CE	16	420	18,000
4	C-123/C-130	1	5	336	- -
5	C-130	CE	2	-	30,000
6	C-130	CE	17	535	126,400
7	C-130	CE	2	162	- -
8	C-130	1	2	210	- -
9	C-130	1	1	-	28,000
10	C-130	2	7	-	195,000
TOTALS:			63	1946	407,400

(c) The volume of business in the Division Baggage Section decreased this quarter due to a reduction in the number of personnel rotating. The section served 922 customers and shipped 1,435 pieces of personnel baggage, weighting a total of 112,590 pounds.

(9) Ammunition Office (25th DISCOM)

(a) Stockage objectives:

(1) Status at end of quarter - 806
(2) On hand - 1068 Tons

(b) Issues:

PERIOD	AMOUNT (Tons/Day)
16 Apr - 15 May	65.58
16 May - 15 Jun	62.59
16 Jun - 15 Jul	45.32

(c) Average for quarter (Tons/Day) 57.83

g. Administration.

(1) Personnel. During the past quarter the personnel posture of the division has been excellent. Assigned strength (approximately 104%) exceeded the authorized strength. This average has been maintained in an attempt to keep the present for duty strength above 100%. There continues to be a shortage of approximately 50% of the authorized Infantry NCOs in grades E-5 and E-6. There are also shortages of MOSs 05C40, 11B40, 11C40 (E-5), 11F40 and 91B10 (E-5). These shortages have occurred primarily as a result of a lack of fill action against requisitions or in some cases personnel in lower grades have been used to fill requisitions in NCOs.

(2) Key Losses/Gains.

(a) 1 May 67 - Col Kenneth E. Buell assumed command of 3rd Brigade, 4th Infantry Division. Col Marshall B Garth departed.

(b) 4 May 67 - LTC George E. Webb Jr. departed.

(c) 8 May 67 - LTC Alan M. R. Dean assigned as 25th Infantry Division Fire Support Coordinator.

(d) 11 May 67 - LTC Jose R. Salcedo departed.

(e) 13 May 67 - LTC James V. Ladd assumed command of the 2nd Battalion, 14th Infantry.

(f) 16 May 67 - LTC Felix Salvador departed.

(g) 19 May 67 - LTC Charles A. Gillis departed. LTC Chandler Goodnow assumed command of the 1st Battalion, 5th Infantry.

(h) 23 May 67 - Col Francis Conaty Jr. departed.

(i) 28 May 67 - LTC Murt F. Kelty assumed command of the TAY NINH base camp.

(j) 31 May 67 - LTC John M. Shea assumed command of 3rd Squadron, 4th Cavalry. Col Doniphan Carter assumed command of the 1st Bde, 35th Inf Div.

(k) 16 Jun 67 - LTC Thomas A. Ware Jr. assumed command of the 4th Battalion, 23d Infantry.

(l) 28 Jun 67 - LTC David R. Hughes assumed command of the 1st Battalion, 27th Infantry.

(m) 1 July 67 - LTC John M. Henchman assigned as Executive Officer, 1st Brigade, 25th Infantry Division.

(n) 3 July 67 - Col Marvin D. Fuller departed.

(o) 3 July 67 - Col Leonard R. Daems Jr. assumed command of DISCOM.

(p) 6 July 67 - LTC Harvey H. Perritt Jr. departed.

(q) 14 July 67 - LTC Raphael D. Tice assigned as Deputy Brigade Commander of the 3d Brigade, 4th Infantry Division.

(r) 16 July 67 - BG Robert C. Shaw departed.

(s) 20 July 67 - LTC Allen T. Lindholm assigned as 25th Infantry Division Artillery Fire Support Coordinator.

(t) 22 July 67 - LTC Louis S. Jennings departed.

(u) 24 July 67 - LTC John M. Holko Jr. departed

(v) 26 July 67 - LTC Walter Adams assigned as Special Assistant to the Chief of Staff.

(w) 31 July 67 - LTC Joseph H. Devins Jr. departed.

(3) The division PX remains in operation with 8,000 square feet of floor space and 7,700 feet of storage space. Total sales for the Division Exchange was $2,764,076.28 for the quarter ending 31 July 1967.

(4) Strengths: Division (-) as of 31 July 1967.

	Off	WO	EM	Agg
Auth	754	114	10,724	11,592
Asgd	757	115	11,063	11,935
PFD	708	113	10,781	11,602

(5) Losses (1 May - 31 Jul 67).

	Off	WO	EM	Agg
KIA	4	0	119	123
WIA	90	5	1,236	1,331
MIA	0	0	0	0
DOW	3	0	12	15
NED	1	1	6	8
NBI	4	0	89	93

(6) Gains (1 May - 31 Jul 67).

Off	WO	EM	Agg
187	34	1,803	2,024

(7) Provost Marshall Activities:

(a) Eight Military Policemen were attached to the 1st Bde, 25th Inf Div for military police support of Operation MANHATTAN and Operation KAWELA. The 1st Bde utilized the MP's from 28 Apr 67 until 8 Jun 67 in support of Operation MANHATTAN and upon its completion went directly into Operation KAWELA which was completed on 16 June. The military police resposibilities were considered sucessful. Normal police support was provided by the eight MPs.

(b) On 8 July 1967 a platoon of Military Police from the 25th MP Company provided Military Police support and acted in an advisory capacity to the VN national police, ARVN and Popular Forces, during Operation AKUMA. The platoon had the responsibility for screening civilians for identification and family birth papers within the village of PHU HOA DONG. The committment ended on 13 July 67. During the operation 4,197 Vietnamese were screened.

(c) From 30 July to 2 Aug 67, the 25th MP Company provided nine Military Policemen for support to the 1st Inf Div during Operation CORONADO II. Normal Military Police support was provided.

h. Revolutionary Development Support.

(1) An increased number of liaison visits were made during the reporting period because of changes in personnel in the Office of the ACofS, G5 and also because of the formation of the Civil Operations for Revolutionary Development Support throughout the Division TAOI. Regular visits were made to the Provinces of HAU NGHIA, BINH DUONG and TAY NINH as well as to each District Headquarters.

(2) The new CORDS office at Province Headquarters will improve the division's support of Revolutionary Development by reducing the number of representatives requiring coordination in Civic Action.

(3) The MACV Hamlet Evaluation Summary (HES) continued to be a valuable tool. The report has been modified to show a more accurate status of the hamlets.

(4) There were no changes in the locations of Revolutionary Development Cadre Teams. Teams fluctuated in strength throughout the period causing the GVN to replace missing members with personnel initially programed to form new teams. This has resulted in fewer teams being formed and current teams have remained at their present locations longer than planned.

(5) Village and Hamlet elections are held during this period. Little VC interference was noted. The election in TAN AN HOI was cancelled on 28 May because candidates had not filed properly. Election was held the following week.

(6) On 2 June the division moved 221 VN Nationals from unauthorised areas in the vicinity of the MICHELIN Rubber Plantation to the refugee center at DAU TIENG XT4946.

(7) The latest change in the HES showing the Security Status of hamlets is an improvement and is of value to a tactical unit.

1. Civic Action.

(1) There are presently 5 AA Platoons from the 2nd Civil Affairs Company attached to the 25th Infantry Division. During this reporting period an additional AA Platoon was attached to the division. This platoon, designated the 15th AA Platoon, is further attached to the 1st Brigade and is performing civic action missions in PHU HOA DONG.

(2) Statistical Summary:

	MAY - JULY	SINCE 1 FEB 67
Helping Hand Recipients	48,053	76,620
MEDCAP Patients	47,552	69,080
MEDCAPS	333	546
Construction Projects	246	441
Education and Training	10	180
Community Relations	21	338

(3) MEDCAPS during this period showed a sharp increase from 237 to 333 conducted. The number of patients more than doubled from 21,528 to 47,552. Additional projects of training GVN medical personnel and conducting maternity clinics continued with approximately 58 people receiving On-Job-Training (OJT).

(4) The Helping Hand program provided additional tents and commodities to the Refugee Center in DAU TIENG in addition to clothing and such necessities as carpenter kits, mason kits, family and individual refugee kits and midwife kits. Approximately 325 refugees from in and around the DIAMOND HEAD Operation are effected. The following is a summary of Helping Hand issues during the quarter:

ITEM	QUANTITY
Books	1290 each
Candy	4 boxes
Solatium Boxes	60 each
Clothing	10.2 tons
Canned Foods	30.5 tons
Family Refugee kits	30 each
Ind Refugee kits	25 each
Midwife kits	6 each

Mushroom Soup	23 cases
Paint	167 gal
School kits	4560 each
Sewing machine	4 each
Soap	39809 bars
Shoe Tongs	32 sets
Towels	41 each
Toys	64 each
Toothpaste	2336 each
Toothbrushes	1481 each
Keen Mix	3 cases
Saws	4 each
Pick Axes	3 each
Shovels	8 each
Tin	183 sheets
Cooking Oil	2084 gal
Baby foods	500 jars
Corn meal	14,000 lbs
Lumber (scrap)	35,350 board feet (est)
Carpenter kits	1 each
Blacksmith kits	1 each
Brick machines	2 each
Friendship kits	72 each
Instructor kits	5 each
Maternity kits	101 each
Textile kits	110 each
Television sets	1 each
Goodwill bags	65 each

(5) Construction:

a Roads repaired 12 (39 km)
b Bridges constructed 3
c Fences 6 (2.3 km)
d Playgrounds 5
e Classrooms 30
f Latrines 6
g Wells 1
h Dispensaries 4
i Miscellaneous:
  (1) Culverts - 5 (61 meters)
  (2) Dwelling - 10
  (3) Irrigation ditches - 2 (4 km)

(6) Participation in civic action effort by local RF/PF has been enthusiastic. Self Help projects have a 95% participation by Vietnamese and 5% by US personnel. Projects undertaken by RF/PF and civilians on a self help basis has reached the point where such projects are willingly assumed. Emphasis has been placed on short term high impact

projects. Self Help projects have been stressed except when it is impossible or impractical to utilize RF/PF units or in instances where the local officials and populations have not been previously introduced to FWAF Civic Action.

(7) During the reporting period numerous Friendship Councils were held throughout the Division TAOI. Problems have been brought to light and the majority resolved. These meetings have been and will continue to be a yardstick in measuring where we stand and where more assistance can be stressed.

(8) This reporting period observed Operation MANHATTAN ending and the MONSOON CAMPAIGN get into full swing. The MONSOON CAMPAIGN has pushed Civic Action to a new high throughout the Division TAOI.

(9) The willingness of the Vietnamese people to participate and encourage self help projects throughout the Division Area has greatly increased the assistance given.

J. Psychological Operations (PSYOPS).

(1) PSYOP activities were directed primarily in support of operations conducted in HAU NGHIA, TAY NINH and BINH DUONG Provinces.

(2) A total of 21,213,184 leaflets were airdropped and hand disseminated throughout the division TAOI. Thirty leaflets were originated by G5 PSYOPS and produced by the 246th PSYOP Co to exploit PSYOP opportunities.

(3) Aerial loudspeaker broadcasts conducted during the quarter totaled 75 hours 35 minutes broadcast time. Ground loudspeaker time totaled 55 hours. An aerial loudspeaker set has been developed to be mounted on a UH1D. This has greatly improved our loudspeaker capability for standard broadcasts and decreased our reaction time for exploiting PSYOP incidents.

(4) During the quarter, the G5 PSYOP section supported the following division operations:

a Operation BARKING SANDS
b Operation KOLEKOLE
c Operation DIAMOND HEAD
d Operation AKUMU
e Operation SABER THRUST
f Operation MANHATTAN
g Operation KAWELA
h Operation JUNCTION CITY
i Operation ALA MOANA
j Operation FORT NISQUALLY

(5) During the month of June the ARVN PSYOP teams attached to 1st Brigade and G5 were ordered back to the 30th POLWAR Bn due to a reorganization. This loss has severly hampered our PSYOP program. The ARVN PSYOP teams are the most effective means available for disseminating credible propaganda.

(6) A PSYOP campaign along the major LOCs within the 25th Inf Div TAOI has resulted in an increasing number of civilians providing information on VC mines and other activities.

(7) Requisitions for PSYOP equipment have been filled in some cases.

(a) Items received so far are:

1 Megaphones
2 Polaroid Cameras

(b) Items still outstanding are:

1 Multilith presses w/components
2 Loudspeaker sets.

(8) A combination of increased military activity and corresponding increase in PSYOPs has shown definite results in the CHIEU HOI Program, particularly in HAU NGHIA Province. CHIEU HOI totals for this province in Fevruary, March and April were 313. In May, June and July, they increased to 556.

(9) Availability of U-10 aircraft has greatly improved our PSYOP capability. We receive an average of 9 missions per week thereby allowing us to cover more targets with greater frequency.

(10) Two HOI CHANH's have been assigned to the G5 for the purpose of evaluating our present leaflets and for developing new leaflets. They have, so far, proved to be a definite benefit to the PSYOPS Program.

(11) The increased number of leaflets dropped and loudspeaker time continues to increase. One indicator of the effectiveness of the PSYOP Program is the increasing number of HOI CHANH. The 246th PSYOP Co has filled all our leaflet requirements on a timely basis, thereby giving us a large number of standard and special leaflets to exploit PSYOP opportunities.

k. Medical.

(1) Personnel and Supporting Medical Units.

(a) At the end of the reporting period, the division was

short four medical officers and three medical service corps officers. Replacements have been requested and are programmed for early August.

(b) Primary medical support to the division still remains more than adequate and of the highest caliber. Specialised treatment for all injuries is immediately available or within twenty minutes flying distance of the 25th Medical Battalion and the 12th Evacuation Hospital.

(c) Primary medical care at TAY NINH is provided by the 45th MUST. DAU TIENG obtains primary medical support from "D" Co, 4th Medical Battalion. All specialty treatment is readily available or within twenty minutes flying time of each primary medical facility mentioned.

(2) Training.

(a) Cross training in the preparation of medical records and reports has been given emphasis because of the anticipated turn over in these particular clerical specialties.

(b) Two 25th Division Regulations 40-19 MEDCAP (MEDCAP II) and 40-10, MEDICAL REPORTS were revised. Circular 40-4 Light Duty Status was instituted after staffing.

(c) Field sanitation classes were conducted at DAU TIENG for one day.

(3) The health of the command has been good. The malaria rate remains constant; the venereal disease rate has dropped. Infectious Hepatitis is on the increase and is being reckoned with accordingly.

(4) Environmental Situation.

(a) Water Supply. A new water point W.P. VI, was opened for amplifying the quantity of potable water at Camp CU CHI.

(b) The drainage problem remains the same because of the lay of the land, the increased rains of the monsoon season, the level of the water table, and the nature of the soil.

(c) The problem of illegal use of non-potable ice has been reckoned with through command channels due to the increase of infectious hepatitis traced probably to this source.

(5) Conclusion. Medical support, even with the influx of new personnel and the annual turn-over of medical personnel, remains adequate in quantity and excellent in quality. Each medical problem has quickly been resolved with consideration of eliminating the cause of each through active command and control measures.

l. Signal. See separate ORLL from 125th Signal Battalion, Attached.

m. Training.

(1) During the period of May, June and July 1967 the following number of personnel attended the division schools listed below:

Small Arms Inspection - 40	Mess Management - 46
Generator Operator - 75	Company Aidman - 37
Projectionist - 35	Mines and Booby Traps - 1,943
Explosives and Demolitions - 402	Tunnel Destruction - 40

(2) In addition, the following number of personnel attended courses given in May and June 1967:

Combat Leaders - 30	NCO Academy - 26
Replacement Training - 1,322	Ambush Academy - 194

(3) On 1 July 1967, the NCO Academy and Ambush Academy courses were discontinued and a new combined course for Lightning Combat Leaders offered in their place. Courses held in July 1967 were:

Lightning Combat Leaders - 160	Replacement Training Course - 617 (For all incoming E-1 through E-7, Warrant Officers, and Lieutenants)

(4) Instruction was also given at non-divisional schools during the reporting period to the following personnel:

COURSE	INSTRUCTOR	NUMBER ATTENDED
Jungle Survival	Fleet Airborne Electronic Training Unit, Pacific (US Navy)	2
JUSPAO/USAID Orientation	Military Assistance Command, Vietnam	9
Aviation Avionics Maintenance Tng Program (AAMTAP)	34th General Support Group, USARV	18
Cable Splicing	40th Signal Bn, USARV	5
XM-21 Armanent	34th General Support Group, USARV	2
Eiffel Bridge Classification and repair	ARVNAF Engr Sch	4

Leaflet Dissemination	50th Political Warfare Bn, MACV	4
ARC-131 FM Radio	198th Sig Detachment, USARV	3
AN/PRC-74,AN/PRR-9 and AN/PRT-4	198th Sig Detachment, USARV 79th Maintenance Bn, Saigon Support Command	24
AN/GRC-106	Mr. George H. Sehmeer, General Dynamics Corp oration (on TDY to CU CHI base camp from CONUS)	25

2. (C) Commanders Observations and Recommendations

a. Observations (Lessons Learned)

(1) Personnel.

ITEM: The continued lack of NCOs particularly in the grade of E-6.

OBSERVATION: The 25th Infantry Division Leaders School for junior enlisted leaders should be continued and increase its capability to instruct a larger number.

(2) Operations.

ITEM: Increased hazards of mines during monsoon season.

DISCUSSION: Because of heavy rains trafficability of the terrain has become extremely difficult and as a result existing trails and roads must be used. The VC have increased their employment of mines along roads and trails. In many instances they have employed mines behind passing vehicles especially in areas where they feel that the same routes will be used by US Forces when they withdraw from an area.

OBSERVATION: Units should when possible avoid using the same road or trail to leave an area they have entered. When this is not possible units should employ mine detectors to sweep ahead of column. A continuous training program for newly assigned personnel on identification and detection of mines must be conducted.

ITEM: Determination of terrain trafficability for tracked vehicles during the rainy season.

DISCUSSION: The recent advent of the rainy season in this area has limited tank travel to hard surface roads. Cross-country mobility has been very poor to impossible in the Division TAOR. Aerial reconnaissance of an area can usually determine whether the terrain is trafficable for track vehicles by closely observing bomb craters, shell holes or large wells. If the water level in these holes is no higher than one foot from the ground level, tank traffic is generally possible with extreme caution. No sudden or sharp turns and no tracking is permissible, under these conditions. In addition, care must be exercised to avoid crossing obstacles such as rice paddy dikes where at some time during the crossing the majority of the weight of the tank is concentrated on a small surface area (such as three road wheels). When observing water levels in holes personnel must be cautioned to determine the distance between water levels and true ground level, not the holes's edge. Bomb and shell craters give a false measure of distance. Determination of trafficability based on dryness of ground surface is not valid due to the high water table and intense heat at the surface caused by the sun.

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OBSERVATION: Aerial observation can assist in determining trafficability of an area but, due to misleading conditions, only a ground reconnaissance of some detail can provide accurate information.

ITEM: Need for additional personnel for Cavalry operations in dense terrain and during rainy season.

DISCUSSION: When operating in dense foliage it has become essential to employ dismounted personnel to the front and flank of the armored vehicles. The loss of tanks, due to wet terrain, has drastically cut the speed by which this type unit can move through dense foliage. Any sudden maneuvering of personnel carriers in such terrain generally results in a thrown track, thereby disabling the vehicle for a period of time and causing additional security requirements. Constant movement through heavy woods and jungle places strain upon the power train and suspension system of the personnel carriers which will result in a higher deadline rate and increased down time. The tactical considerations involved in the movement of armored vehicles in dense foliage are as follows:

a. Loss of tanks (due to terrain) slows movement.

b. Attempts at maneuver results in down vehicles as a result of thrown or broken tracks.

c. Recon by fire has negligible effects.

d. Observation and fields of fire are limited.

e. VC are able to make and break contact at will due to greater maneuverability and speed of dismounted personnel.

f. Personnel carriers provide protections against small arms fire but little protection again high arcing grenades or RPG-2s. The TOE for an Armored Cavalry unit provides for a dismounted capability of one infantry squad within each platoon. This squad is not capable of providing the necessary protection to 7 personnel carriers. Internal augmentation of this force can be accomplished by dismounting all but a minimum crew from the remaining vehicles. This would provide an additional 12 men, however, there is no provision for additional communications equipment. The addition of twelve men to the dismount capability of the platoon would provide sufficient security provided the unit is stationary. This force however, is not sufficient for tactical movement through dense foliage.

OBSERVATION: When an Armored Cavalry unit must be employed in dense vegetation, additional dismounted troops and communications equipment must be attached for successful employment.

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ITEM: Use of MAD System (81 Mortar Air Delivery System).

DISCUSSION: This system was tried on several occasions and proved to be highly unsatisfactory. The round will not detonate in water. Secondly, for a pin point type target there are too many factors to consider in order to hit a target i.e., airspeed, altitude, moving targets. In most cases artillery can cover any target discovered, and once the initial adjustment has been made Fuze VT can be employed and give devastating target coverage. The target initially must be pinned down by use of helicopter-borne machine guns and the area covered by door gunners.

OBSERVATION: That the use of the MAD was ineffective in our areas of operation and that the use of such system should be discontinued in future operations.

ITEM: Use of the AT-912 as an elevated antenna.

DISCUSSION: Due to the limited number of RC-292 antennas authorized a unit, it is necessary to employ field expedients in order to provide additional elevated antennas.

OBSERVATION: Experience has shown that the AT-912, when elevated, is at least as effective as the RC-292. The only problem involved is causing the matching unit to properly match the frequency in as much as matching unit power cables are not available in sufficient lengths. For situations where frequencies will be relatively static, the matching unit can be pretuned with the MX-6707/VRC. The antenna must first be attached to the radio using the short matching unit power cable, the radio turned on and the proper frequency set. The antenna matching unit can be disconnected and the antenna elevated.

ITEM: Use of AN/GRA 39, remote control unit for read back during fire missions.

DISCUSSION: The continuous requirement for accurate transmission and receipt of firing data necessitates a number of checks in the gunnery chain in a minimum amount of time. A good communications system is therefore an important factor in firing.

OBSERVATION: The remote control component of the AN/GRA 39 radio set control group is used in place of field telephones at each howitzer position and in the Fire Direction Center (FDC). Wire lines are laid from each howitzer to the MX155 switching kit and through the exec post telephone to the FDC. This procedure accomplishes the following:

a. All personnel in each firing section hear all commands from the exec post.

b. All personnel in the FDC hear all commands sent from the exec post to the firing sections and all readbacks data from guns to exec post.

c. Maximum number of firing battery personnel are able to monitor commands and readback providing more efficient gunnery performance and accuracy of firing data.

ITEM: Use of CS Gas to expose the enemy.

DISCUSSION: The use of CS gas has proven successful on many operations. Once a VC unit, personnel, or a suspected hiding site has been spotted one gun ship saturates the area with CS gas. Once the VC move out of the area the other gunships rolls in on the target.

OBSERVATION: All gun ships and C&C helicopters are now carrying CS gas to employ against targets or opportunity.

ITEM: Joint operations with US Air Force Forward Air Controllers (FAC) and Gun Team to stop and destroy the VC.

DISCUSSION: On several occasions one gun team has worked with FAC in spoting enemy activity. The FAC aircraft usually orbits above 6000 feet and by the use of binoculars, and an observer, detect enemy movement or activity. The gun team, orbiting a predesignated area out of the area of operation and on call, are directed in low level by the FAC on to the target. If the enemy takes evasive action, CS gas is used in an attempt to drive the VC out of hiding.

OBSERVATION: Those joint operations have proven highly successful and on several occasions have caught the VC off guard. It has further proven that joint operations between services can be accomplished in an excellent and efficient manner.

ITEM: Firing charts with 6400 mils capability.

DISCUSSION: It has been found that in setting out deflection indices for a 6400 mil firing chart, a five to ten mil arc was left over in one quadrant thus leaving one quadrant's deflection indices that much in error.

OBSERVATION: Firing charts are constructed with the primary direction of lay 6400 mils at deflection 2800. An exact 6400, 1600, 3200, and 4800 azimuth index is established for each battery on the firing chart. Placing the arm of the RDP on the 6400 mil index and, working in a clockwise direction, a deflection index is placed at scribe mark number 8 on the RDP. Number it 2 and label it with the appropriate battery designation. Next, place the arm of the RDP on the 1600 mil index and place a deflection index out at the scribe mark numbered 2. Number this index 1 and label it with the appropriate battery designation. Place another index out from number 1 at 1000 mils using the arm of the RDP. Number it 0 and label it with the appropriate battery designation. The index at 3200 and 6400 will be numbered 3 and labeled with the appropriate battery designation.

Repeat the above procedures beginning at the 3200 index.

By modifying the Artillery School's recommended method, the error is taken up throughout the firing chart. Inaccuracies in the deflection indices are no more than one or two mils.

ITEM: Daylight H&I's

DISCUSSION: H&I's are normally scheduled during the hours of darkness. Past experience and intelligence reports indicate that the VC often move during daylight when aircraft are out of the area of movement.

OBSERVATION: H&I's are planned in areas of known VC activity making use of past experience and current intelligence. These H&I's are fired from early morning until dusk, at which time the normal H&I program is initiated. Volume of fire is dependent upon whether harrasment or interdiction of a particular terrain feature is the objective.

ITEM: Preplanned Blocking Fires.

DISCUSSION: After a preparation has been fired on an LZ, routes of withdrawal often permit the VC to escape. These routes are normally canals or trails in the general area of operations.

OBSERVATION: Preplanned on call groups of targets are assigned to likely avenues of escape or withdrawal routes to insure rapid response by artillery elements in providing blocking fires.

ITEM: Preparation of Landing Zone.

DISCUSSION: It has been found that scheduled preparation, planned from plcto and photo maps, have sometimes left a critical area, hedgerow, or bunker relatively uncovered by artillery fires. Moreover, with several batteries firing a given preparation, it is difficult for an air observer to adjust additional fires into the critical area from a target included in the scheduled preparation fires.

OBSERVATION: It has proved useful to predesignate a target, not a part of the regular scheduled preparation, in the landing zone. This target is used as an adjusting point by the air observer for adjusting additional coverage of an LZ, when necessary.

ITEM: Shifting Fires.

DISCUSSION: It has been a general practice to prepare landing zones per a given schedule of fires and to terminate firing on schedule just prior to arrival of armed or troop aircraft at the LZ.

OBSERVATION: When shifted according to a schedule of fires, artillery fires can effectively block routes of VC withdrawal from a prepared LZ. Close coordination must be effected between artillery firing units, artillery LNO's with command and control ships, armed helicopter pilots, and troop aircraft pilots. Elements of information to be coordinated are:

a. Areas into which fires are to be shifted.

b. Colored smoke or other signal to indicate termination of preparation of LZ.

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c. Orientation of gun-target lines,

d. Other preplanned control measures.

ITEM: Computing of firing data for air observer missions.

DISCUSSION: Battery Fire Direction Centers have experienced difficulty in controlling the subsequent adjustments of multiple missions with the TOE equipment and personnel available.

OBSERVATION: When aerial observers adjust, using the gun-target line, the initial chart data is computed and checked, subsequent corrections are thencomputed using 100/R for deflection and the C factor for quadrants, using two computers for independent checks. This system has proved to be more rapid and as accurate as the chart procedures.

ITEM: FADAC metro message.

DISCUSSION: In order for the Field Artillery Digital Automatic Computer (FADAC) to be used as effectively as possible, accurate data must be programmed into the computer as rapidly as possible upon receipt of the data. In programming weather data, the fastest way is to prepare a teletype tape of the data and feed it into the machine automatically.

OBSERVATION: It was found that the teletype operator could prepare a tape and transmit it faster if it was given to him in the exact format that the computer would accept. The metro and radio sections prepared a form which showed exactly how the tape should be prepared. The metro section puts the data on the form, showing where a space or carriage return (symbol) should be. The computer will accept only 16 numbers to a line. It will accept a corrected mistake, if the correct number is covered by the letters character (symbol #). It will not accept a random key or a line feed. Using this form, the teletype operators were able to punch a tape much faster and consequently transmit it to the units much faster.

ITEM: Striking Targets Acquired by the Manpacked Personnel Detector E63 (People Sniffer).

DISCUSSION: The "People Sniffer" device mounted on a UH-1 helicopter has been very effective in acquiring targets. The device has been employed with a LFT, to provide cover for the "Sniffer Helicopter" and to strike targets. Most sensings have occured over jungles or dense foliage. This type terrain limits the effectiveness of aerial fire power delivered by the LFT. Targets acquired by the "People Sniffer" could be more effectively engaged by TAC AIR or artillery fire.

OBSERVATION: Heavy volume artillery fire or large ordnance deliveries by TAC AIR provides more effective engagement of acquired targets.

ITEM: Supplementing Firefly Missions with the "People Sniffer".

DISCUSSION: The Firefly Mission employs starlight scopes, flares, and searchlights to acquire targets during the hours of darkness. Target acquisition using these devices has been very effective on rivers and open terrain, but has been ineffective over dense foliage along rivers and streams. By augmenting the firefly aircraft with a "People Sniffer" in another aircraft, targets that would have gone unnoticed are now acquired and engaged.

OBSERVATION: The "People Sniffer" device has proven to be very effective in target acquisition, and is now being employed regularly to increase the success of Firefly missions.

ITEM: Control of Artillery fire during combat operations.

DISCUSSION: On a recent operation the artillery preparatory fire was directed by the airmobile force and air mission commanders from the command and control aircraft orbiting the objective area.

OBSERVATION: Fire support is required as close to the lift element as possible during the approach and landing in the landing zone in order to decrease and possibly neutralize the amount of enemy fire received. Artillery should be continued until the assault element is only minutes away from the landing zone. Gunships should prepare the landing zone by suppressive fires as soon as artillery fire has stopped. This technique is very effective in giving the flight element continuous support and is preferable to the much used time on target method.

ITEM: Eagle Flight Operations.

DISCUSSION: The 25th Aviation Battalion conducted several "Eagle Flights" operations with divisional ground forces. A normal operation requires eight aircraft, one command and control aircraft, one utility aircraft, and a minimum of four gunships.

Once in the area of operation, two gunships descend to low level to fix VC positions. When an enemy position is located, normally by receiving ground fire, the lead aircraft marks it with smoke and climbs to join the remaining lift aircraft who begins descending out of an orbit over a predetermined reference point.

The gunships escorting the lead aircraft will engage the VC while the flight joins and lands in a landing zone selected in close proximity to the enemy position. From the time the VC are found until troops are on the ground is normally less than four minutes. The lift aircraft can then load a reinforcing unit and orbit for immediate employment or go to strip alert in a selected staging area.

OBSERVATION: A normal operation utilizes eight lift aircraft, however, use of five ship eagle flights in areas where intelligence sources indicate a relatively small VC force is desirable. With good intelligence information,

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these small Eagle Flights are effective and have produced numerous POWs and detainees. A utility aircraft is a great asset. This aircraft should have a medic and a maintenance team on board. It can be used to replace a downed aircraft while the maintenance team renders assistance, evacuate WIAs, KIAs, POWs and detainees, perform command and control during absence of the normal C&C aircraft (refueling, etc.), and provide emergency resupply.

ITEM: Screening assault element with smoke.

DISCUSSION: On several operations Co B, 25th Avn Bn was called upon to provide a smoke screen for the purpose of obscuring the lift element from enemy observation. This is accomplished by installation of an integral Smoke Generator, 53E 00-62A, on UH-1 helicopter.

Wind must be considered when using smoke, from the aviation standpoint, and to insure that the smoke does not interfere with the ground tactical plan.

OBSERVATION: Under proper wind conditions the smoke screen is very effective in obscuring the flight element from likely enemy positions.

ITEM: Use of Smoke.

DISCUSSION: The use of smoke in Landing Zones (LZ) and Pickup Zones (PZ) has been found to be very helpful to pilots. Pathfinders should use smoke at both ends of the LZ or PZ. When the lead pilot calls for smoke the Pathfinders pop smoke at the first touch down point. Five seconds later, smoke is popped just beyond the last touch down point.

OBSERVATION: This system enables the flight leaders to aline the flight on the long axis of the PZ or LZ far enough out to preclude last minute adjustments.

ITEM: XM 172 Panel.

DISCUSSION: It has been found that the XM 172 Panel is excellent for marking friendly positions at night. The illuminating panel can only be seen from the air, and not by the enemy when it is layed out flat on the ground.

OBSERVATION: Utilization of the illuminating panel will assist friendly troops in the employment of attack helicopters at night.

ITEM: Use of High Voltage Generators and Electrical Line.

DISCUSSION: Recently power lines were knocked down into a water soaked field, causing a direct short to ground. A crowd soon gathered around the mishap. One individual in the crowd received a burn and severe shock which could have been fatal.

OBSERVATION: When power lines are downed or shorted, unqualified personnel should not work on lines. If possible, turn generator off.

ITEM: People Sniffer.

OBSERVATION: This instrument has proven successful in locating individuals in heavily vegetated areas. Large areas of this nature can be covered by employing the People Sniffer in a UHLD (traveling at tree top level) accompanied by a light fire team (two gun ships). Upon detection a smoke grenade is dropped to pinpoint location identified. The light fire team can cover the area until an orbiting Eagle Flight element is available to conduct a ground search.

ITEM: Cordon and Search Operations.

OBSERVATION: When continually operating in one area, cordon and search operations should be varied as to time. The most effective times to establish a cordon have been during the siesta hours (1200-1400 hours), late afternoon (1700-1800) or at night (2100-0550 hours).

DISCUSSION: When establishing a cordon by airmobile means, always maintain an airmobile reserve for employment against VC exfiltration not observed by those forces already on the ground.

ITEM: Employment of CS.

OBSERVATION: Prior to destruction of bunkers and tunnels, seed with CS.

ITEM: Employment of 90mm Recoilless Rifles in the Attack.

DISCUSSION: The canister round employed by the 90mm rifle gunner in conjunction with M60 teams provides the terrain clearing capability and the automatic fire power needed to make effective fields of fire, and suppress enemy small arms fire simultaneously.

OBSERVATION: When enemy small arms fire is encountered from a heavily foliated area, targets must be identified as soon as possible. Effective firing with .50 cal or M60 machine guns is not always possible when observation is limited. However, 90mm canister rounds may be used to open fields of fire and to permit the automatic weapons to effectively engage point targets.

ITEM: Use of foot Patrols with Mech Operations.

DISCUSSION: Often when a mech unit operates in the field the individual soldier is not employed on the ground, rather the mech unit conducts the S&D operations mounted. The VC soon anticipate this and expect to hear the APCs coming toward them.

OBSERVATION: When Mech is used in an area, separate dismounted operations should be conducted. It has been found that these foot mounted troops will

surprise the enemy who is listening for the sound of APCs.

ITEM: Use of 81mm Mortar Aiming Stake Lights.

DISCUSSION: The aiming stake lights when turned on during the hours of darkness present a very marked target and is easily seen from a great distance at certain location from outside of the perimeter. When under attack, or prior to attack the VC are able to sight in on the aiming stake lights. The lights cannot be turned off unless personnel go to each stake and flip the switch. During a heavy ground attack this is not always possible.

OBSERVATION: Aiming lights should be rigged with WD-1 commo wire and dry cell batteries with the control switch near the mortar for control by the gun crew, thus enabling the crew to turn the lights on and off at will.

ITEM: Tents, Lean-to Shelters, etc.

DISCUSSION: On a bright night the starlight and moonlight cause a very bright reflection from personnel shelters that are damp or wet from dew or rain. This glow or shimmering effect of the wet water proof lean-to's is easily seen from a great distance and are perfect targets during night attacks on the perimeter.

OBSERVATION: Personnel shelters should not be erected lean-to or tent fashion in forward areas. Those shelters that must be erected should be well camouflaged to prevent "shine". Individuals should rely on a poncho pulled over and laying on the individual rather than a tent.

ITEM: Distinctive Outline of Tracked Vehicles during the Hours of Darkness.

DISCUSSION: Tracked vehicles have a very distinctive outline and are easily "sky lighted" from the ground by the square shape of the vehicle, the cupola and guard inside the supola, and the large .50 caliber machine gun sticking out.

OBSERVATION: The outline can be broken up by strategic emplacement of vines, brush and trees. If possible the Armored personnel carrier should be parked in or near scrub growth and additional brush placed near all four corners and behind the machine gunner. Caution should be exercised so as not to block the observation of the guard in the cupola.

ITEM: Radio Call Lights and Dash Oil Lights Illuminating Inside the Track.

DISCUSSION: On the large radio sets each time a transmission is incomir the radio call light illuminates the inside of a vehicle. The dash ligh (oil light, master switchlight, etc.,) are on continually and presents good target from across the perimeter.

OBSERVATION: Radio call lights should be turned off in forward areas, or taped so as to allow only a pin point of light to shine directly to the front of the radio, Dash lights should be completely covered with sand bags.

A poncho should be draped over the rear of the track to block all possible illumination (in lieu of the track ramp being closed).

ITEM: Smoking inside of Tracks and in Cupola while on Guard.

DISCUSSION: Cigarettes, lighters and flame producing devices when used inside of tracks and in cupolas provide the VC with excellent targets.

OBSERVATION: No smoking should be permitted anywhere except in a covered hole or a closed Armored Personnel Carrier. There should be no smoking in a cupola of an Armored Personnel Carrier.

ITEM: Situation Report through the Rifle Company chain of Command.

DISCUSSION: Experience proves that a situation report must be given more often than once per hour at unit level to insure that personnel are fully awake and alert on the machine gun while on guard.

OBSERVATION: Siatuation reports should be given from each track to the platoon leader's track every 15 minutes. Platoon Leaders should make situation reports to company every 30 minutes, during the hours of darkness.

ITEM: Return of Fire and Fire Control.

DISCUSSION: Training of the people and force of habit prevents the personnel on guard from firing on movement, trip flares that have been illuminated etc., by the VC. In most cases fire control is held at too high a level in the chain of command. By the time the guard receives permission to fire the attack has been launched by the VC.

OBSERVATION: Fire Control should be at the lowest level practical. All personnel should be fully aware of locations of friendly elements, types of fire than can be returned initially, (i.e., small arms only on squad leaders orders, .50 caliber or larger on Company Commander's order only), and location of LP's and ambush patrols. Certain types of probing fires shoulp be returned with certain and selected weapons from the perimeter. Pre-mature firing of heavy weapons discloses their location pre-maturely.

ITEM: Depressions, Holes and Berms outside the protective wire used to launch assaults.

DISCUSSION: Any depression or hole near the outside of the perimeter wire, if used, is a perfect covered position from which to launch an RPG attack.

OBSERVATION: Each hole or depression should be booby trapped, illuminated and have punji stakes emplaced in them. Trip flares in holes, claymore mines emplaced in the walls of holes with detonating wire buried and aiming and elevation stakes on the perimeter to place accurate M79 fire in the hole should be employed.

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ITEM: Battlefield illumination usage so as to illuminate the VC and outside the perimeter without illuminating the friendly elements.

DISCUSSION: Illumination over head, not only illuminates the VC but also the friendly forces. A technique is needed to illuminate only that portion of the battle field occupied by the VC.

OBSERVATION: One in every four 81mm defensive concentrations should be white phosphorous. 81mm "defcons" should be within 15-20 meters of the protective wire. 81mm illumination rounds should be fired so as to burn on the ground at a distance of 200-300 meters from the protective wire depending on the terrain. This sky lights the attacking VC without completely illuminating the friendly position. Consideration should be given to trip flares with pull wires running back to the perimeter. Flood lights may also be emplaced 50-100 meters from the perimeter and placed to shine across the front of the platoon position. The spot light should be booby trapped to prevent removal. Lights so employed must be controlled from the platoon leaders vehicle.

ITEM: Maximum effect from grazing fire with ground mounted weapons.

DISCUSSION: More grazing fire is required at ground level to repel the attack and prevent VC from crawling into the wire where he can do more damage.

OBSERVATION: All M60 machine guns should be mounted on tripods with T&E mechanism for effective grazing fire. The M60 mounted on a tripod during the hours of darkness tend to be fired too high or into the ground in front of the gun. The tripod insures accurate grazing fire. Additional fire power can be brought to bear by placing additional .50 caliber machine guns in ground mounted positions. These may be obtained from destroyed tracks or from some other source other than removing them from the track vehicles. If necessary some .50 cal MGs can be dismounted at night, from HQ and Mortar APCs.

ITEM: Routine of placing command post tracks in the center of a circular perimeter for forward rifle companies.

DISCUSSION: RON perimeters should be frequently changed as to design, shape and location (open field or in woodline).

OBSERVATION: The VC are well aware of the mechanized concept of the Headquarters group being in the center of the circular perimeter. Different techniques should be employed, i.e., command group vehicles may be placed away from the center and behind the line platoon tracks. The unit perimeter may be emplaced in the edge of a woodline allowing a helipad for aerial resupply etc., or within a finger of trees extending into an open field.

ITEM: Injuries to personnel sleeping in open, unprotected areas, or inside of tracked vehicles.

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DISCUSSION: Most casualties come from personnel in or near tracked vehicles or sleeping exposed above ground.

OBSERVATION: No more than two men per ground position, and no one should be allowed to sleep in tracks. Everyone not sleeping in a hole or gun positions should be laying flat on the ground, (no cots) and the sleeping area should be sand bagged above the line of the body.

ITEM: Effect of River Tides upon Search Operations.

DISCUSSION: Numerous VC caches have been discovered along rivers and their tributaries. In most cases the caches were discovered at low tide. Apparently the VC bury their equipment/ammunition in the river bank at low tide, thus obtaining additional concealment during periods of high tide. Caches concealed in this manner are easier to detect at low tide. Accurate tidal information has not been available, consequently search operations frequently have not been fully effective in tidal areas.

OBSERVATION: Accurate information concerning tides should be developed for all areas affected by tide changes.

ITEM: Light Machine Gun Mounted on OH-23 Aircraft.

DISCUSSION: The use of OH-23 Aircraft for C&C during mechanized operations has been effective in detecting VC movement ahead of the mechanized forces. In some cases VC have escaped before maneuver elements/or light fire teams could reach the objective area due to lack of organic fire power on the OH-23 aircraft.

OBSERVATION: A light machine gun mounted on the OH-23 could engage the VC and restrict his movement until maneuver elements or light fire teams reach the scene.

ITEM: Use of Hand Grenades during Search Operations along Canals and Rivers.

DISCUSSION: VC hide under water when US Forces approach a canal or river line. Single grenades tossed along the water frequently are not effective due to insufficient area coverage.

OBSERVATION: An effective technique is to line several men along the canal/river bank and have these men throw grenades on command. This procedure saturates the area and will normally force the VC to the surface.

ITEM: Increased Boobytrapping of Ambush Patrol Exits.

DISCUSSION: Due to the increased number of VC mines and boobytraps employed in and near the tactical wire, departing ambush patrols have incurred several casualties.

OBSERVATION: To counteract boobytraps the exit gates were relocated and minesweeps employed prior to the departure of the patrols.

ITEM: Return Route.

DISCUSSION: On a recent combat ambush patrol, a member of the patrol was wounded when he detonated an enemy boobytrap. The individual was returning to his position after implacing his claymore mine but did not return the same way he had departed.

OBSERVATION: The patrol member could have lessened his chances of becoming a casualty by returning to his position via the same route he had departed.

ITEM: Overhead Tripwires.

DISCUSSION: The Viet Cong are constantly changing their methods of employing boobytrap tripwires. Tripwires have been encountered which are several feet above the eye level. These wires are tripped by the unsuspecting RTO who walks under them carrying his PRC-25 and long antennae.

OBSERVATION: The unit commander must remind their subordinates to be constantly alert for new methods of VC boobytraps and tripwire employment.

ITEM: Chicom Grenade Boobytraps in Open Terrain.

DISCUSSION: Many Chicom grenades boobytraps have been encountered recently in grassy open terrain, away from hedgerows. These grenades are generally painted green and tied or wired to stakes approximately 6" off the ground, with pins removed. As a soldier knocks the stake, the grenade handle falls to the ground and the grenade explodes instantly.

OBSERVATION: Care should be used in moving through open grassy areas, personnel should move widely separated from each other and leaders should choose routes with low grass rather than high grass when possible.

ITEM: VC Sniper Teams.

DISCUSSION: Recently VC sniper teams working in pairs have been encountered probing night defense perimeters. Two or three snipers open fire from one side of the perimeter, after friendly attention is concentrated on this initial fire, a second sniper team open up from the opposite side of the perimeter.

OBSERVATION: Use indirect fire as primary means of countering snipers harassing a defensive perimter and do not move defenders to other positions to counter sniper fire.

ITEM: Searching Hedgerows.

DISCUSSION: Thick vegetation and the danger of boobytraps make it impractical for an entire squad or platoon to search hedgerows.

OBSERVATION: Two or three men should remove all gear and check the hedgerow

while the rest of the element secures the area. Men unencumbered by gear can make a more thorough search in thick vegetation, and the danger of loose gear detonating boobytraps by hanging up in bamboo is reduced.

ITEM: Jungle Clearing I.

DISCUSSION: During Operation JUNCTION CITY and MANHATTAN, the Engineer Battalion was involved in jungle clearing operations. To accomplish this mission, Rome Plows were employed. These plows are mounted on standard bulldozers with specially constructed blades and operator cabs attached. The blade has a knife edge and is set on an angle. During Operation JUNCTION CITY, the clearing consisted of making 100 meter wide rights-of-way along roads in the operational area. To accomplish this, Rome Plow-Bulldozer teams were created utilizing two Rome Plows with each bulldozer. The plows would knock down the brush and trees followed by the bulldozers wind-rowing the fallen vegetation. In War Zone C, the operational area for JUNCTION CITY, the jungle is extremely heavy and the trees range from 100-200 feet in height. In many cases it was necessary to use demolition to remove the larger trees.

During Operation MANHATTAN, Rome Plows were used to clear road right-of-ways and large scale jungle clearing. With as many as eight plows working at a single time it was necessary to devise a system whereby all the plows could be operated in an area restricted by the availability of security. This operation was conducted in the lower BOI LOI Woods area. During clearing, Rome Plows were employed separately from the bulldozers with the bulldozers used only to wind-row relatively small areas for helicopter landing pads. This was done because the dozers could not wind-row at the same rate as the plows. In order to provide security for the dozers it was necessary to work them in a small area.

OBSERVATION: As a result of these two clearing operations, many techniques have been evolved for jungle clearing. The most significant being that the productivity of each plow is dependent upon the number of plows operating. It was found during Operation MANHATTAN that by placing the plows in an echelon left formation, with the jungle to be cleared on the left, that five plows operating for 8 hours could clear 100 acres of jungle in one day. By keeping the jungle on the left, the angled blade of the plow pushes the overflow to the right and out of the way of the plow and the following plows. Mechanized infantry moved with the plows to provide security.

Maintenance played a large role in the success of the operation. Without continued maintenance support these plows could not keep running. In the vicinity of each clearing area, a maintenance point was established with an air compressor and two contact maintenance teams. Once every 4 hours a plow would stop to be checked, refueled, and have branches and leaves blown out of the engine compartment. It also gave the operators a chance to take a 15 minute break.

Another problem encountered was the control and guidance of the leading plow when cutting through a new section of jungle. This was alleviat

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ed by painting large numbers on the top of the cabs and providing a HRC-25 Radio to the assistant operator. A light observation helicopter, in direct contact with the lead plow, provided necessary control and guidance for initial cutting.

ITEM: Jungle Clearing II.

DISCUSSION: A new concept in land clearing has been put to the test near CU CHI, Vietnam by Co C, 65th Engr Bn. The operation consists of dragging a large anchor chain behind two vehicles, spaced so that the vegetation which passes between them will come into contact with the chain. The links of the chain are 9 inches wide and 12 inces long. Each link weighs approximately 28 pounds.

The very nature of the equipment employed in the operation dictates the type of clearing that can be accomplished. Basically, the weight of the chain and the pulling force of the vehicle are the principle clearing factors. It is easily understood, then, that vegetation which can withstand a swift blow from a heavy object is not effectively cleared by this operation. This is especially found to be true in areas of undergrowth, where the diameters of the trees and shrubs are appreciably smaller than four inches. The chain passes over vegetation of this size, after which the vegetation springs up. Somewhat different and much more gratifying and useful results are obtained when the chain is used to clear trees with diameters greater than four inches. The chain has been used to clear rubber trees up to three feet in the base diameter. The chain catches around the base of the tree, rides up on the trunk, causes the tree to lean, and eventually weighs it down; uprooting it and laying it on the ground.

The chain was found to be most effective in clearing rubber trees rather than any other type of vegetation. In the plantation, it was possible to drive the vehicle down the paths between the trees, since the trees are planted in straight rows, and side by side. Trees in the Filhol Plantation, where the cutting was done, are planted in rows running generally Northwest to Southwest. The rows are approximately 8 meters apart, and the trees are approximately 6 meters apart within the rows.

The selection of direction in which to clear is a relatively simple matter. The important factor to remember is that the most effective cuts are long and straight. The width of the cut will depend on the size of the trees. It was found that the trees in the Filhol, which averaged about twenty inches in diameter, were most effectively cleared in cuts of two rows each. The length of the chain is a factor here also, since the strain on the vehicle varies directly with the angle between the chain. The chain is made of 90 foot sections which can be joined or separated. Through experiment, a length of 3, 360 feet, or 4 section, was found to be optimum, since this length of chain was sufficient to reduce strain on the vehicles when clearing two rows of trees; and at the same time was not so lengthy as to greatly impede maneuverability.

Careful briefing of both vehicle operators and vehicle commanders is a must before beginning the operation. It should be emphasized that staying in the clear paths is important. Also drivers should try to coordinate with one another during the operation. The vehicles should "glide" during instants of little resistance, and then accelerate as soon as the chain catches on the trees. This prevents damage to pintles, stalling, and in general, makes for a smoother operation. In addition, one vehicle should remain slightly ahead of the other, so that if one hits a mine, personnel on the other vehicle are not likely to be affected.

Reversing direction when clearing can be a very tricky operation. If at all possible, cuts should be made between two open areas, to facilitate turning. The turns should be very deliberate, especially when there are obstacles present. One method is to make a half circle with both vehicles. Another method is for one vehicle to make a very tight neutral steer while the other makes a somewhat broader turn. Still another method is for both vehicles to back over the chain, make a tight turn, and head in the reverse direction for another cut. Many variations are possible. The vehicle drivers should not hesitate to drive over the chain if it is necessary to do so, and must only be careful not to get so far apart as to be pulling against each other. In most cases, the condition of soil will dictate the the type of turn. This is because the maneuverability of the vehicles with the chain is quite hampered in boggy or even damp terrain. Also, it is important to cut in such a manner that the fallen trees will not be in the path of the vehicles on future cuts. A minimum of planning is required to accomplish this, since the chains pulls the trees inward and stacks them in very neat rows.

Once the operation begins, it is necessary to assert aggressive control. The control element must direct the entire operation and be constantly alert. It must react quickly to obstacles and be quick in formulating a plan for reversing for direction after each cut. The controller should be on one of the two vehicles pulling the chain, and should have radio contact with all elements of the operation so that the operation will run as smoothly as possible, instead of bogging down, due to some unforseen situation.

The mechanical considerations in an operation of this type are many, and play an important role. The weak areas soon present themselves as a matter of course during operations. There are some areas in which preventive maintenance can save time and enhance the operation in general. The weakest part of the actual installation is the pintles to which the chain is attached. It is found that the constant strain again the pintles soon wear the threads on the four bolts which hold them in place. It is not uncommon for these bolts to fail. One solution to this problem is to carry extra bolts for quick repairs. An even better solution is to reinforce with 1" or 1 1/8" wire cable. The cable is threaded through the two hook brackets to form a complete loop through the third link from the end of the chain. This reinforcement takes a great deal of strain off the pintles and reduces pintle failure by about 90%.

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The transmission of the vehicles suffer since low-gear only must be used during the actual clearing. Sometimes it becomes necessary to stop for cooling off periods of 30 to 40 minutes. A loss of power is also a common phenomenon. This is attributed to the over-working of the transmission. It is necessary to check the oil frequently and to have an ample supply of oil on hand at all times. If there are any oil leaks in the vehicle or if a leak develops, the vehicle should not be used for this operation until such time that the leak has been repaired completely. The nature of the strain is such that even a tiny oil leak will soon become a serious maintenance problem.

Another problem area is the final drive of the vehicles. Pulling the chain causes considerable strain on this assembly. A vehicle with faulty final drive should not be used in this operation. Particular attention should be paid to the final drive during operations so that serious damage can be avoided.

The probability of throwing a track on an operation of this type is much greater than other operations. The extra burden of pulling the chain makes even the slighest obstacle such as a log or small trench harbingers of nearly certain track failure. Tight track and very selective driving are a necessity if the operation is to run unhampered. Clearly, maintenance considerations play an important role in this operation, as in most clearing operations.

The tactical considerations of the anchor chain clearing operation merit special attention. The types of security and employment thereof should be an integral part of the planning phase. The optimum security is a force of five personnel carriers, two preceding the chain pullers, two following, and one on the flank which is exposed to the uncut woodline. This all around mobile security makes up for the inherently vulnerable cumbersome chain set-up. The security elements should be close enough to provide adequate support, yet far enough away to allow the cutting to run smoothly. Tanks also can be used to provide security for the operation. An added benefit of using tanks would be that they can pull the chain if something went wrong with one of the prime movers.

The most important tactical concept to keep in mind is alertness. The fact that the operation covers so much area places a tremendous responsibility on all concerned to be especially watchful. To effect unity of command, the control element must direct not only the clearing but concurrently, the security.

A comparison of performance of three types of prime movers was made on two different days. On 10 July 1967, M48A3 tanks were compared to D-7 Dozers. On 14 July 1967, M-88 recovery vehicles were tested. All three types of vehicles were employed in the same manner: Clearing two rows of trees in the Filhol Plantation. The dozers had the slowest clearing rate of 5.26 acres/hour. The M-88s, were most effective, with 28.9 acres/hour. The tanks had the second fastest rate of 15.1 acres/hour. Thus, with an

effectiveness of 1 for dozers, the tanks would be rated at 15.1/5.28-2.86, and the M-88s would be rated at 28.9/5.28-5.49.

The greatest differences in performances, other than in clearing rates, were the amounts of time the vehicles were down for repairs. The dozers, even though they worked slower, did not have to make even one stop for maintenance. The tanks and M-88s, however, were frequently stopping to repair pintles, check the oil, cool off transmission, or replace tracks.

The greatest single stopping factor was pintle failure. As mentioned above, this problem has been solved by using a reinforcing cable. The other maintenance drawbacks of M-88s and M-40s, although numerous, are not sufficient to warrant choice of D-7s for pulling the chain in lieu of M-88s or M48A3s.

If the choice is between M-88s and M48A3s, the greater horsepower and weight, and hence momentum, of the M-88s make them the logical selection. When properly employed and maintained, the M-88s can clear nearly twice as effectively as M48A3s. The extra power makes them more maneuverable than the tanks. Also, the M-88 transmission is designed to pull heavier loads, and there is less tendency to run the M-88s to stall out when the chain comes in contact with unusually large trees. In areas of smaller trees, it is possible to run the M-88s in second gear, speeding up the operation, and reducing transmission strain.

If necessary, a tank and an M-88, may be employed in the same operation. The rate of clearing, however, would be governed by the tank, since it would be the weaker of the two.

During the 15 days of operations with the chain, C Company was able to clear approximately 1500 acres of the Filhol Plantation. The Operation, now reduced from mere work to a science, has been placed in the hands of a sister company in the 65th Engr Bn. A second, somewhat smaller chain has been acquired, and the operations are continuing with M-88s as prime movers. The smaller chain links are 5" wide and 9" long. They weigh approximately 60% as much as the larger links. This chain was doubled and attached to one section of the larger chain.

Before the original chain was acquired, a 1 1/8" cable, weighted by scrap steel, was tested to determine effectiveness in clearing. The cable has a tendency to slip over small vegetation, and was relatively ineffective. If the cable was used to clear large trees, the strain encountered would make it necessary to replace the cable often, making the operation logistically and economically unfeasible. The operation was considered unfruitful and no data concerning effectiveness was collected or analyzed.

On 10 July 1967, two D-7 Dozers were used to wind-row the rubber trees which had been cleared by the anchor chain. It was found that the dozers averaged wind-rowing 1.1 acres/hour/dozer. At this rate it would take 23.9/1.1 or at least 26, D-7 Dozers wind-rowing in support of two M-88s clearing rubber trees. This is clearly not feasible, obviously the gains

of wind-rowing are not equivalent to the required equipment density.

On 10 July 1967, napalm disbursed from flame tracks was used in an attempt to burn rubber trees which had been cut down for a period of six months. Briefly, the timber would not ignite. The fallen timber in the rubber plantation is spread out so that the spaces between rows form natural fire barriers. As mentioned above, windrowing is not feasible. The conclusion is that it is not feasible to dispose of the fallen timber by fire.

OBSERVATIONS:

1. The following are observation and recommendation on anchor chain clearing operations. Some are taken from the preceding text and serve as a summary thereof, other are merely hints emanating from observation.

a. That M-88s be used in lieu of M-48A3s for this operation.

b. That the pintles on the M-88s be reinforced with wire cable prior to each day's operation.

c. That two 30 minutes maintenance stops be made each normal working day.

d. That clevises, pintles, and reinforcing cables be checked often for wear and tear.

e. That the day's clearing be carefully pre-planned, and that track commanders and drivers be thoroughly briefed prior to starting the operation. This should include a fly over when possible.

f. That extra lengths of reinforcement cable be taken each day to replace any that may wear out.

g. That a "quick-release" device for the reinforcing cable be employed. This consists of two clevises attached through the tow-hook brackets.

h. That the clearing be done between two unobstructed areas whenever possible.

The conclusion is anchor chain, when properly employed, is highly effective in clearing rubber plantation, as any other type of clearing operation this one denies concealment and cover to the enemy. The large-scale nature of the operation suggests that it merits special attention and that it should be given careful consideration.

ITEM: Rafting Operation.

DISCUSSION: On 10 June 1967, Co E, 65th Engr Bn, was tasked to provide bridging in support of Operation BARKING SANDS, in the vicinity of XT564325. The mission called for the use of the 15 men assault boats, an aluminum foot bridge, LTR, and a Class 60 M4T6 raft. The crossing site was relatively inaccessible to wheel vehicles and engineer equipment, other than dozers, due to the absence of roads and steep bank approaches. It was decided therefor, that all bridging equipment be airtransported to the crossing site with the exception of the assault boats and foot bridge. They were transported by vehicles as close to the site as possible and then hand-carried the rest of the way. This done in order to achieve the element of surprise and secure a crossing site. Airtransporting (by CH-47) the LTR, the 27' bridge erection boats, and preassembled M4T6 floats was a novel method of transporting this equipment for the 65th Engr Bn within the 25th Inf Div Operational area. The equipment was a great success with minimum of time and without any difficulties. The operation was a great success and it provided valuable information and experience for similar future operations.

OBSERVATION: As a result of this operation the following techniques were adopted:

a. Bridging and rafting support can be provided to any crossing site required by tactical units by transporting equipment with CH-47s. Rafting support can be provided and extracted with a matter of a few hours. This is highly important where the tactical situation calls for a quick crossing or emergency extraction.

b. The M4T6 Float Bridge can be airtransported in preassembled packages. This is particularly important since it eliminates the need for bridge trucks and cranes at the crossing site. It releases this equipment for other missions.

c. The aluminum corduroy treadway was utilized for the first time and it proved to be a very valuable piece of equipment. It was used on the far shore approach which was marshy and muddy. This treadway provided enough stability to cross tanks and even an AVLB. Without it, extensive fill and equipment work would have been required.

d. Due to the tremendous rotor downwash created by the CH-47, it was found necessary to secure all pontons and floats in order to prevent capsizing or drifting of this equipment. One LTR half ponton was capsized and sunk as a result of rotor.

e. This operation also pointed out the importance of prearranging and briefing of personnel emplacing the equipment and the pilots transporting it. It is recommended that in future operation liaison visits be made engineer units and aviation personnel to make sure that the best procedures are used and any problems areas straightened out prior to the operation.

ITEM: Phu Cuong River Crossing.

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DISCUSSION: The mission at the Phu Cuong River Crossing called for two each five float reinforced rafts, two each LTRs, seven 27' bridge erection boats, and a complete 38' dry span. All the equipment and personnel required to accomplish the mission were airtransported in forty three CH-47 (Chinook) sorties. The whole operation was completed within eight hours and the construction of the rafts completed within the same day.

OBSERVATIONS: The following are some of the problems areas and lessons learned during the operation:

a. One of the M4T6 floats was capsized as it was set down by the Chinook. Several bridge components were lost as a result. This can be avoided in future operations by instructing the pilots to hover over the landing zone for a short period of time in order to decrease the oscillation of the float and then gently place it in the water. Also, all component parts placed in the float should be adequately secured to the float during transportation.

b. The far shore pier was not adequate nor sufficiently strong to accomodate high class vehicles or wide loads. To overcome this problem, a 38' 4" dry span was constructed on top of the existing and all efforts were made to locate the load bearing stiffeners over the structurely sound piles. A tapered balk ramp was also used to connect the pier to the shore. This arrangement proved very satisfactory and all vehicles were crossed without any difficulty.

c. Another problem area noted during the operation was that the pontons had a tendency to shift off center from the saddle panels. After a closer inspection and observation, it was determined that this was caused during airlifting. This problem was solved by tightening the straps from the pontons to the center beams as tight as possible before airlifting. Also, retainer lugs to the saddle adaptors should be checked to make sure that they are secured in place and safety pinned.

d. One of the major problems during the operation occurred when an M4T6 float was dropped during airlift back to CU CHI. Upon recovery, the float was found to be beyond repair. During investigation, it was found that the retainer lugs had failed in bending thus causing the float to drop. This can be attributed to the fact that the total load of the float and the rotor downwash of the aircraft were supported by the retainer lugs. This problem has been eliminated by slinging the floats differently. The slings will be placed on the knotched portion of the center beam where it connects with the beam extension. This will eliminate the stress concentration on the retainer lugs.

e. It has been proven by this operation that small river crossing operations can be totally supported by "B" Company, thus, releasing line companies to perform other missions.

f. This type of an operation increases the capability of the bridge

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company and adds to the support of the Division. It can be used in relatively inaccessible areas and it eliminates the need for engineer equipment to emplace the rafts.

ITEM: Two Fixed Spans (38' 4") Supported by a Trestle at Midspan.

DISCUSSION: The mission called for two complete 38' 4" dry spans and a 50 ton trestle for midspan support. This was an emergency mission and had to be completed within the shortest period in order to open the MSR to SOUI DA. All required personnel and equipment were airlifted to the site. Dry spans and trestle were emplaced by Chinook with very few problems.

OBSERVATION: When the bridge was assembled it was possible to span a larger span than is possible to span with standard spans. The classification of the bridge, however, was reduced to Class 30. Classification can be increased by providing additional trestles and diagonal cross bracing. This technique provides emergency support for MSR repairs and can be accomplished within a short period of time.

ITEM: Employment of ¼ Ton Truck-Mounted Searchlights.

DISCUSSION: The employment of searchlights in support of perimeter defense is new to many artillery units.

OBSERVATION: Searchlights should be accurately located and laid for direction. To illuminate a given area an azimuth should be given to the searchlight. When the searchlight detects a target the azimuth and estimated range can be reported. Searchlights should be collocated or have direct communications with the automatic weapons on the perimeter so that rapid fire can be brought to bear on the target. Lights should have alternate position and be repositioned nightly.

(3) Training and Organization.

ITEM: Search Techniques: There is a definite lack of knowledge in conducting a search of villages.

OBSERVATION: Each infantry squad should be organized so that each member has a particular job to perform when searching a house.

DISCUSSION: Instruction is required to point out possible and likely hiding places when conducting searches. Use of an VN RF/PF instructor would be ideal because of their first hand knowledge of Vietnamese village life. The ideal training area would be a vacated house in a pacified or secured area.

ITEM: Weapons Familiarization.

DISCUSSION: It was found that newly arriving personnel were in most cases unfamiliar with the various weapons organic to an Armored Cavalry Troop,

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especially the M16 rifle and the crew served weapons. This resulted in unnecessary malfunctions of weapons because of inadequate maintenance. There also were instances of personnel being injured by Cal 50 MGs due to the fact that personnel were inadequately trained in care and cleaning and assembly and disassembly of crew served weapons.

OBSERVATION: Institution of a training program at platoon level in which all personnel were given instructions on all weapons organic to the platoon resulted in a substantial decrease in malfunctioning of weapons. Injuries due to improper assembly of, or inadequate maintenance of weapons have also ceased.

ITEM: Reorganization of Aero-Rifles and LRRP.

DISCUSSION: Due to the deactivation of the Long Range Reconnaissance Patrol (LRRP) as a separate unit of the Division Cavalry Squadron there is a need for personnel trained for the type missions previously performed by the LRRP.

OBSERVATION: Personnel assigned to the Aero-Rifle Platoon of D Troop, 3d Squadron, 4th Cavalry will receive training to enable them to perform LRRP missions.

ITEM: Training and use of Light Scout Aircraft.

DISCUSSION: The Division Cavalry Squadron has been successful in employment of OH-23 armed with the M-2 Gun Kit when used in conjunction with ground operations and give the ground commander valuable means of collecting intelligence on his area of operations. The Light Scout aircraft also provides the commander a means to assist him in controlling movement of his ground forces.

OBSERVATION: Aviators from D Troop, 3d Squadron, 4th Cavalry were sent to the 1st Squadron, 9th Cavalry to observe employment techniques of the light scout helicopter and obtain knowledge on training requirements for use of the OH-23 in a light scout role. The OH-23 Helicopters of D Troop have been armed with the MG Gun Kit, and are presently being employed in a light Scout role. The only problem encountered thus far is a lack of TOE aerial observers and a lack of aviators trained in the techniques of employment of light aircraft.

ITEM: Training Radar Operators.

DISCUSSION: The Cavalry Squadron has been hindered in employment of its organic radar equipment because of a lack of qualified personnel.

OBSERVATION: In order to overcome this problem, personnel from HQ, A&B Troops are presently undergoing training at TRA CU Special Forces Camp. Under this program the personnel are getting practical training in the employment of the AN/TPS 33H and AN/PPS-4 Radar Sets.

ITEM: Control of Fires During Contact. 54

DISCUSSION: VC initiated incidents in heavily wooded areas are generally at close range and from spider holes or trench lines. In such incidents fire must be returned but it must be controlled and be directed at the enemy. Indiscriminate firing hinders the situation because it makes it more difficult to determine where the enemy is located. Suppressive fire, when employed, must be placed on the ground and must be walked into the enemy position.

OBSERVATION: Squad leaders must train their personnel in reaction to close contact situations. Personnel must be designated to observe for the enemy positions and employ aimed fire at identified or suspected positions.

ITEM: Supervision and control of personnel.

DISCUSSION: Supervision and control of personnel is difficult because of the nature of operations over wide areas or in areas of thick vegetation. The problem is also increased by the fact that a large number of operations require use of small units i.e., platoon or squad. Therefore the matters of control and supervision must be designated to the lowest practical level.

OBSERVATION: Small unit leaders must continually be reminded of the importance of their duties. Commanders must train these leaders to a point of proficiency that will permit mission accomplishment with minimum supervision.

(4) Intelligence.

ITEM: Use of Polariod Camera for Aerial Photographs.

DISCUSSION: Because of the usefulness of aerial photos and the need for them on short notice, use of the polaroid camera is ideal. These photos can greatly aid unit and patrol leaders in accomplishing the mission by providing up-to-the-minute coverage. The user can choose the specific area of desired coverage and can obtain any number of photos desired.

OBSERVATION: Companies/Sections should request coverage telephonically from the Battalion S2. When the photos are no longer required by the unit they should be returned to the S2 for filing for possible future requirements.

ITEM: MEDCAP Used to Obtain Information.

DISCUSSION: The use of Medical Civic Action Programs (MEDCAP) is good means of making contact and provides an excellent means of obtaining enemy information. A unit recently exploited this in the following manner: A VN individual appeared at a Bn perimeter seeking medical attention for an alleged injury. He actually had information concerning AT mine locations. The unit was able to dress him in fatigues and fly him over the area where he successfully located the mines by dropping flour sacks near them. Then they returned him to the base camp and bandaged his fake leg injury prior

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to releasing him 20 minutes from the time he arrived. His identity was safe guarded and the mines located.

OBSERVATION: Be aware of all benefits available to a unit through the use of MEDCAPS and exploit completely through hand dissemination of weapon reward leaflets and national safe conduct passes.

ITEM: Necessity to furnish Hoi Chanhs with a Certificate for weapons turned in at time of rallying.

DISCUSSION: ARVN authorities have requested the assistance of US units in assuring that Hoi Chanhs are given credit for weapons turned in at the time of rallying. Rewards are paid by local Chieu Hoi Cadre for weapons turned in, but the absence of a certificate by the unit to which the individual rallied makes payment impossible.

OBSERVATION: Units receiving ralliers with weapons should furnish a certificate with the rallier when he is brought to Division. Units should not pay a Hoi Chanh in the field for his weapon turned in at time of rallying. This does not preclude payment to the Hoi Chanh for information leading to location of arms and material caches.

ITEM: Use of the same interrogator while exploiting a Source builds confidence of Source for the interrogator.

DISCUSSION: Continued use of the same interrogator while exploiting a PW frequently results in the establishment of rapport between the interrogator and the source, which leads to more complete cooperation of source. Many examples can be found where a source was "won over" by the interrogator and readily volunteered information of intelligence value which might otherwise have been withheld.

OBSERVATION: Within operational limitations make maximum use of the rapport established by familiarity of source and interrogator.

ITEM: Interrogation of Returnees.

DISCUSSION: Interrogation of Returnees revels that their willingness to cooperate with intelligence personnel and lead US Forces to the Viet Cong Troop locations and caches decreases as he is exposed to the reeducation techniques and the security of a GVN "Chieu Hoi" Center. As he feels more secure, the Returnee is less willing to take the risks involved in leading US Forces to the Viet Cong locations and caches.

OBSERVATION: Exploit intelligence gained from the interrogation of a Returnee as soon as possible.

ITEM: Analysis of Charts and Maps.

DISCUSSION: Past experience has shown that a detailed analysis of captured

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charts and maps reveals much information of intelligence value. All too often a rapid scanning of a document fails to disclose any data of significance. In order to fully exploit captured charts or maps, every portion of the map must be studied and analyzed with great care. Partially erased lines, rotations and trail traces may not be detected at first glance. Indentations in the paper or acetate, which have been caused by the pressure of a pen or pencil, are difficult to detect. A method found to be useful in detecting these indentation is the slant light technique. In this technique, the personel examining the map holds a flashlight or some other light source at an angle of approximately 15 degrees to the surface of the map or acetate covering. The light strikes the surface of the map in such a manner as to cause a shadow to be formed in the slight indentation. A grease pencil is then used to highlight the shadow area. Charts and maps captured in recent months confirm that VC cadre are often careless in their map security. Every effort should be made to capitalize on this VC weakness.

OBSERVATION: (1) All captured maps and charts should be carefully screened and analyzed to insure that this source of intelligence information does not go unexploited.

(2) The slant light technique can be a valuable tool in discovering information that would otherwise go undetected.

ITEM: Perishability of Intelligence.

DISCUSSION: The platoon leader of the Security Platoon of a Viet Cong Military Region Headquarters rallied to a district office of the government of Viet Nam one morning at approximately 0700 hours. He was interviewed at that location all that day. The next day, Military Intelligence personnel of the 25th Infantry Division were notified that he had rallied and arrangements were made to have him brought to the Base Camp Friendship House at that time. During his interview at the base camp, it was determined that he was willing to lead US Troops to the headquarters which he had been guarding. A plan was drawn and the next morning, the Hoi Chanh led the troops to the headquarters, however, the only things remaining were the building of the headquarters, which were destroyed.

OBSERVATION: If even as little as forty-eight hours elapse after the Viet Cong have reason to believe that an important cadre has rallied to the government, they have time to minimize the value of any information he may furnish.

(5) Logistics.

ITEM: Class V Stockage Levels at TAY NINH.

DISCUSSION: The division's position has been that Class V stockage levels at the 1st Log Comd Class V ASP at TAY NINH have been excessive for several months. Stockage objectives exceeded any realistic anticipated usage factors. The large amounts of Class V unnecessarily produced a significant target.

OBSERVATION: The division position was stated during briefings to CG IIFFORCEV and Deputy CG, USARV. Result was the reduction of stockage objectives by approximately 40%.

ITEM: Resupply of Forward Units.

OBSERVATION: Resupply by CH-47 continues to be the most profitable means of resupply. This is particularly true with perishable food items required for immediate consumption. Ice is transported externally and easily delivered to individual company locations. Other items can then be carried internally without the possibility of spoilage by the melting of ice.

ITEM: Aircraft Refueling Point.

OBSERVATION: The capability for refueling would be highly advantageous at semi-permanent Fire Support and Patrol Bases. This would be used primarily for C&C aircraft during combat operations to cut down on turn-around time to distant refueling points (i.e., CU CHI, DAU TIENG).

ITEM: Brake Lining and Components.

DISCUSSION: Brakes are being worn at a high rate. This is basically due to the extreme mud conditions and the high abrasive action of sand and laterite. Brake drums have also been reported packed with dirt which makes mechanism impossible to operate.

OBSERVATION: Brake linings and components are seasonal items in RVN and the stockage objectives should be programed before the rainy season. Organizations who programed to pull wheels and clear brake components experienced a much lower deadline rate than units who merely performed routine maintenance service.

ITEM: Time Change Components.

DISCUSSION: Some time change components are not on hand in supply channels and have to be requisitioned as an 02 priority to prevent excessive down time.

OBSERVATION: That organizations forecast these requirements at least 150 flying hours prior to expected component time change to insure that the components are available when needed.

ITEM: M16 Rifle.

DISCUSSION: The M16 Rifle has been the subject of concern by commanders of units equipped with this weapon. The problem stems from inadequate operator maintenance. Due to the construction of the weapon and its tolerances, a build up of carbon in the chamber plus wear on the extractor results in extraction difficulties. Dirty ammunition and chambers causes ruptured cartridges.

OBSERVATION: Emphasis has been placed on proper cleaning and lubrication procedures. Small arms specialists conducted training classes and presented proper operators maintenance techniques to organizational personnel. The receipt of additional bore and chamber brushes has helped to reduce the problem.

ITEM: 10KW Generator.

DISCUSSION: Considerable difficulty has been experienced due to premature engine failure on the 10KW generators, FSN 2805-872-5972. This engine operates at a high rate of speed and has a high oil consumption rate. If the oil level gets too low, the engine will either throw a rod or burn out a bearing.

OBSERVATION: Particular emphasis should be placed on changing of oil and filters to include adequate lubrication. Organizational maintenance personnel and operators must check oil level every four (4) hours of operation.

ITEM: Underwood Typewriters.

DISCUSSION: Underwood Typewriters, the standard model, are being turned in to field maintenance at an alarming rate. Basic reason for repair is due to slow reaction of the keys and numerous carriage problems. Inspection of these typewriters when turned in reveals that they are wet, dirty and rusty. Top covers are missing.

OBSERVATION: Emphasis has been placed on all using units on proper cleaning and lubricating procedures. In addition, all typewriters leaving the repair shop will have a decal fixed to the body at a noticeable location stating "Cover typewriter when not in use!"

ITEM: Efficiant Aerial Resupply.

DISCUSSION: During the past quarters the Division Cavalry Squadron has participated in several missions. One such mission resulted in an expedient means of resupply which previously was not employed. The A-22 cargo sling bags were incorporated and used to the best advantage. Result from using these containers were: Less man hours spent in preparation of resupply, less handling of resupply items; increased flights in a minimum amount of time, and less spoilage of food stuffs due to insulating capability of the cargo bag.

OBSERVATION: The method of resupply is far superior to methods previously used.

ITEM: Container for 105mm Beehive Ammunition.

DISCUSSION: Beehive ammunition is normally kept on hand in firing positions for extended periods of time. Because it is packed in the conventional fiber and wooden box, prolonged exposure to the weather and frequent handling

54 caused by battery moves often results in the fiber containers becoming unserviceable, providing no protection to the round. Fibers from other 105mm ammunition can not be used because of the greater length of the beehive round. To overcome this, a metal container has been constructed from two (2) 105mm jungle packs. The complete round and fiber are placed inside the container with the top portion of the fiber removed for easy access to the projectile. If the beehive fiber is unserviceable, a regular HE fiber can be used. The metal ring nut on the metal container cap must be oiled frequently to prevent rusting.

OBSERVATION: The container has proven to be satisfactory. It provides an air tight sturdy container in which the round can be maintained for an indefinite period of time without being damaged.

ITEM: Necessity for skilled carpenters for construction of bunkers and modern buildings.

DISCUSSION: The need for an enormous amount of bunker construction for artillery units and the need to build mess halls and living quarters in base camp position require that the unit must have skilled carpenters.

OBSERVATION: It is imperative that all units deploying to Vietnam screen personnel to determine those with specific skills and also to place increased emphasis on field fortification when outlining training programs. Classes on field fortifications should have a maximum amount of practical application.

ITEM: Scarcity of RC-292 Antennas.

DISCUSSION: The antenna RC-292 is used extensively in the theater with the AN/VRC-12 series of FM radio to increase the relatively decreased transmission range caused by atmospheric conditions. Most units are not authorized a sufficient amount of these antennas to operate simutaneously in field and fixed locations as is required in RVN.

OBSERVATION: Units should insure that authorizations are increased by use of MTOE prior to deployment.

ITEM: Medication Deterioration.

DISCUSSION: Coated and uncoated tablets deteriorate rapidly in humid tropical climate unless they are stored in air tight containers.

OBSERVATION: Medications should be stored and dispensed in glass or plastic containers.

ITEM: Storage of military and personnel clothing and equipment on displacement from base camp.

DISCUSSION: Movement orders are often given on short notice and weight

limitations are necessary in order to pack all the required combat equipment in accordance with the available transportation. As a result, many items of both military and personal equipment are left in base camp. This becomes a problem if the equipment is not properly secured, as other units often occupy temporarily vacated base camp positions.

OBSERVATION: Handy foot lockers can be constructed from the 105mm ammunition boxes by removing the top from one box and the bottom from another and then nailing the boxes together. The boxes can then be locked with inexpensive locks purchased from the PX and stored in conex containers by section.

ITEM: Ear Infection.

DISCUSSION: A prominent problem among personnel in RVN, especially aviators, is infection in the ear canal. This is attributable to allowing non-potable shower water to get into the ears. Also, perspiration may accumulate inside the earphones of the flight helmet and drain into the ear.

OBSERVATION: Make a conscious effort to keep non-potable water out of ears. Clean ears often with Q-Tips and alcohol. Use nylon net covers over the earphones in the flight helmet and clean these regularly. Report to a medical facility at first signs of pain, itching or discharge from ears.

ITEM: Rashes on Body.

DISCUSSION: Many people ignore rashes on various areas of the body and consider them insignificant. In the humid climate of Vietnam, there is a likelihood of developing fungal rashes, which can be complicated if not treated early.

OBSERVATION: When any rash appears on your body, go to a medical facility at once. The use of powder in underwear and socks helps to control rashes. Rashes will not usually disappear without treatment.

ITEM: Tail Boom Attaching Point (Helicopter UH1C and D).

DISCUSSION AND OBSERVATION: During this quarter over fifty percent of our aircraft have been found to have loose high shear rivets in the tail boom attaching point. For easier inspection by the pilots and crew, the above mentioned area has been cleaned and painted white. Much emphasis has been placed on this area in the daily and flight readiness inspection.

ITEM: 90° Gear Box Attaching Point.

DISCUSSION AND OBSERVATION: During this quarter over fifty percent of our aircraft have been found to have loose rivets and skin cracks at and around the 90° gear box attaching point. The above mentioned area has also been cleaned and painted white for easier inspection by the pilot and crew.

ITEM: Pulling of Rivets on the Vertical Fin.

DISCUSSION: During normal operations, rivets at the trailing edge of the vertical fin have been found to be loose and, in some cases, missing.

OBSERVATION: The rivets at the trailing edge of the vertical fin should be closely checked during daily inspections and each rivet should be checked individually.

ITEM: Premature 540 Bearing Failures.

DISCUSSION: During the preceding quarter it was found that numerous bearings throughout the 540 Rotor System were failing prematurely because of insufficient lubrication.

OBSERVATION: The bearings of the 540 Rotor System should be lubricated at least every five flying hours or whenever the helicopters have been operating in extremely dusty conditions.

ITEM: Lubrication of Vehicles.

DISCUSSION: The rainy season has proven again that mud and sand can destroy bearings, both roller and needle. It will enter the bearings in one or two days, either around the seals or forced thru the fitting when it is not cleaned prior to being lubricated.

OBSERVATION: When adverse conditions exist vehicles should be lubricated more often, fittings should be cleaned prior to lubing, and all of the old grease should be forced out to rid the bearing of dirt.

ITEM: Main Rotor Damper Push-Pull Tubes.

DISCUSSION AND OBSERVATION: Lubrication requirements for main rotor damper push-pull tubes in TM 55-1520-210-20 call for lubricating every twenty-five hours. Because of existing conditions these tubes must be lubricated daily to insure a minimum wear and a life of one hundred hours or more. Due to the rapid wear of the damper tubes, they have fallen into the category of "Hard to get Items"

ITEM: Starter-Generator Cooling Fan.

DISCUSSION AND OBSERVATION: This unit has had three starter-generator cooling fans fail during this quarter. Due to metal from worn bearings contaminating engine oil system all three engines had to be replaced. It has become the policy of this command to remove the above mentioned item during periodic inspection for detailed inspection.

(6) Civic Action and PSYOPS.

ITEM: News Media.

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OBSERVATION: The establishment of a local newspaper in the hamlet of CAO PHU, KHIEM HANH District has been highly effective in disseminating news items, agricultral tips and GVN-US policy. This paper is written by the hamlet officials and published by US resources.

ITEM: Food and Wage Supplement.

OBSERVATION: An experiment is presently being conducted in the KHIEM HANH District to supplement the food and wages of the local civilian population. This is being accomplished by the establishment of a rabbit farm and fish hatchery. If these pilot tests succeed, other farms and hatcheries will be initiated.

ITEM: Civic Programs need a Secure area from which to Expand.

DISCUSSION: A consistency of effort with primary emphasis on hamlet security in early stages on civic action is imperative.

OBSERVATION: When security requirements have been met, further more sophisticated projects can be conducted with maximum success.

ITEM: Civic Action in New Area.

DISCUSSION: To be successful in an area that has not had civic action projects, advance coordination with appropriate GVN officials is a must. Advance planning is required to overcome the support and logistical problems resulting from increased distances and communications difficulties.

OBSERVATION: There is no substitute for extensive prior planning and maximum coordination with local GVN officials to insure their cooperation.

ITEM: Areas where MEDCAPS are held on an irregular, infrequent basis.

DISCUSSION: Poor or partial success has been shown to MEDCAPS where they are only able to be held on an infrequent basis. Advance advertisement is necessary to support of MED CAP activities.

OBSERVATION: The use of VIS to advertise benefits has increased the participation and a more active response of the people has resulted.

ITEM: Use of VN Wives for Civic Action Projects.

DISCUSSION: VN military wives can, if properly encouraged and guided, be interested and useful in helping others thus bringing prestige to their husbands units. A few material resources provided by a US element and enthusiasm on the part of US can get a program off to a good start. The VN women obviously get a great deal of satisfaction out of being a part of an organized service project.

6?

OBSERVATION: Don't overlook the resources available in the wives and dependents of local VN military units. The needed rapport with the people is readily available thru this channel.

ITEM: Self Help Program.

DISCUSSION: In many cases, VN people show little interest or desire to better themselves and perform physical labor only when they receive supplies, material and equipment from US Forces. Some have the attitude that the US Forces should not only supply them, but also do the physical labor to complete the project.

OBSERVATION: Use of US personnel to do physical labor must be kept to a minimum. GVN officials and energetic S-5's are the key to developing and maintaining the people's support.

ITEM: Psyop loudspeaker usage more effective against VC and NVA units.

DISCUSSION: Many Hoi Chanh have indicated that they were made aware of the Chieu Hoi program by loudspeaker broadcasts even though the area had been subjected to numerous leaflet drops. It is further indicated in the VC main forces the NVA cadre and leaders took great precautions to police up leaflets and destroy them, and issued instructions to the soldiers to not read the leaflets.

OBSERVATION: Use of loudspeaker appeals is most effective against known hard core VC or NVA units and should be used extensively when intelligence indicates presence of this type unit.

ITEM: Frequent personal contact should be maintained between unit CA personnel and local GVN authorities in the unit's area of CA responsibility.

DISCUSSION: Due to distances between base camps and outlying hamlets the degree of road "insecurity" and lack of land line communications, direct liaison with Vietnamese officials at district and lower levels is often difficult to accomplish with the frequency desired. A major determent is the requirement for security in areas lacking 100% GVN control. The security requirement also deters, to a certain degree, from the unit's current tactical mission strength.

OBSERVATION: Maintenance of frequent personal contact is best accomplished by recognizing the necessity of it and by allowing S-5 personnel greater freedom of movement than would normally be permitted.

ITEM: Local PF units should be employed for control purposes to the maximum extent consistent with the security considerations during the conduct of MEDCAP.

DISCUSSION: During conduct of MEDCAPs, a recurring problem is control of civilians, particularly children, whose enthusiasm and numbers often hamper effectiveness of the surgeon and medic team. US personnel are

often limited in number and do not speak Vietnamese. If local PF are available, their use for control purposes leaves US Personnel free to conduct the MEDCAP, and gives the PF an active role in the operation, thus enhancing their image in the eyes of the people. The principle of mutual support is strengthened by US Forces and PF working together. It should be noted, however, that outpost security is not to be compromised in favor of control requirements.

OBSERVATION: Use of local PF for MEDCAP control purposes, aside from the obvious benefits, produces secondary benefits consistent with GVN-US policy and procedure.

ITEM: Main Supply Route (MSR) Security mission and convoy escort involve a civilian traffic control problem. PSYOPS can be easily and effectively integrated into the measures taken to reduce this particular problem.

DISCUSSION: In addition to distribution of check-point leaflets and civilian traffic control regulations, a "letter" type leaflet which expresses decreased accident rate and concern for the safety of children serves the dual purpose of regulatory device and a PSYOP vehicle. The "letter" emphasizes the personal concern a unit has for civilians affected by heavy military traffic and solicits cooperation that is accepted more readily than regulatory posters or leaflets. Unit identification in the letter adds to the credibility of personal concern.

OBSERVATION: Units using this "letter" form of leaflet, are actively conducting PSYOPS in the accomplishment of a primary civilian traffic control problem.

ITEM: Evacuation of Civilian Remains.

DISCUSSION: A continual problem area during this reporting period was the evacuation of civilian remains. Civilians, within the tactical area of interest, are often brought to US Medical facilities within base camps for medical care if the seriousness of the case so warrants. If the individual expires while in a US base camp hospital, the requirement exists to evacuate the remains. Destinations vary in each case. Security requirements vary with the destination, the route to the destination and the time of day (movement is naturally restricted at night). Doctrinally, responsibilities for evacuation of civilian remains are vague.

OBSERVATION: A procedure has been implemented by which civilian remains are evacuated by the division's organic medical battalion, using the most expeditious means of transportation and the means of transportation deemed most appropriate based on the destination of the remains.

b. Recommendations.

(1) Command emphasis at all levels must be given to regular vehicular maintenance. This also applies to proper maintenance and accountability of organic weapons, tools, and equipment. Squad leaders must insure

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that each day, in the field, the drivers perform proper before and after operation checks, and correct or report all deficiencies. Companies must also be periodically rotated to base camp for a thorough battalion level Technical Inspection, Inventory, Maintenance and Training Program.

(2) The VC have developed a very effective method of attacking mechanized units in a hasty perimeter at night. The close in firing of RPGs under the cover of automatic weapons, and mortars can cause considerable casualties among both personnel and vehicles. Proper positioning and camouflage of tracks and ground mounted weapons, when coupled with good fighting and sleeping holes, plus employment of other basic defensive measures (trip flares, concertina wire, claymores, LPs/OPs, etc.) will significantly reduce our casualties and increase the price the enemy must pay. Frequent change of positions and patterns of establishing defensive perimeters are also effective counters. Tactics must be developed for establishing defensible positions in the windrows of trees knocked down by Rome Plows and in the less dense rubber or wooded areas. Common sense, imagination, employment of all available resources, hard work, and continuous command supervision will defeat this current VC tactic.

(3) On the other hand it is possible for units to become too defensive minded. To properly dig in and fortify a position that will be employed only one or two nights takes an inordinate amount of time and effort that might better be used for offensive operations. This handicap can be overcome or mitigated in several ways.

a. Establishment, over a period of time, of a number of temporary base areas in a given AO. These can then be reoccupied, on a random basis, with a minimum amount of time required to check for mines, booby traps, VC aiming stakes, etc. Each time such a position was used the fighting/sleeping holes would be improved and alternate positions prepared.

b. Preparation of a strong position and "invite" the VC to attack. This concept is based on the fact that it is easier for the VC to find us than vice versa. Such a position should have at least a triple concertina wire around the perimeter, and if at all possible the APCs should be dug in to gun defilade level by bulldozers. Effective warning system, fire plans and counter attack plans by properly located reaction forces are essential ingredients of this tactic.

c. Movement of the entire unit after dusk for several hundred or more meters. Although the VC will hear tracks moving it is difficult to pinpoint the exact range and azimuth of movement. This tactic will hinder the VC's penchant for thorough reconnaissance and minute planning. The new position may be secured beforehand by a stay behind patrol. Proper security must be taken during the displacement to preclude an ambush. A hasty defense should be set up in new positions to include a single strand of concertina, trip flares, claymores, and a combination fighting/sleeping prone shelters dug; some of them may be provided overhead cover by the APC itself. No more than one man should be in an APC at any one time.

(4) All fruits and vegetables must be inspected by Class I Supply personnel and the assigned Veterinarian.

(5) The ice cream issues from SAIGON should continue so that issues to units can be made in accordance with the "A" ration cyclic menu. There was a higher bacteria count in the Formost Ice Cream, however, some improvement has been made during the quarter.

(6) Continued close monitoring of the unit's periodic logistics report together with liaison in SAIGON is essential in limiting critical shortages.

FOR THE COMMANDER:

JASPER J. WILSON
Colonel, GS
Chief of Staff

4 Appendices Incld
1. Task Organization
2. ORLL, 125th Sig Bn
3. COAAR AKUMU
4. Pictures

Combat Operations After Action Reports (COAAR) of the operations completed during the reporting period have already been forwarded under separate cover.

DISTRIBUTION:

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AVFBC-H (19 Aug 67) 1st Ind
SUBJECT: Operational Report- Lessons Learned, 25th Infantry Division, 31 July 1967 (RCS CSFOR-65) (U)

DA, HQ II FFORCEV, APO San Francisco 96266 26 AUG 1967

THRU: Commanding General, USARV, ATTN: AVHGC-DH, APO 96375

Commander in Chief, US Army Pacific, ATTN: GPOP-MH, APO 96558

TO: Assistant Chief of Staff for Force Development, Dept of the Army, Washington, D.C. 20310

1. Subject report is forwarded.

2. This headquarters concurs with the comments and recommendations in the report. No action is required by this headquarters.

FOR THE COMMANDER:

1 Incl
nc

R. E. VANDEGRIFT
CPT, AGC
Asst AG

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AVHGC-DST (19 Aug 67) 2d Ind
SUBJECT: Operational Report-Lessons Learned for the Period Ending 31 July 1967 (RCS CSFOR-65) (U)

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96375 28 SEP 1967

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-OT, APO 96558

1. (U) This headquarters has reviewed the Operational Report-Lessons Learned for the period ending 31 July 1967 from Headquarters, 25th Infantry Division (WALXAT) as indorsed.

2. (C) Pertinent comments follow:

a. Reference item concerning evacuation of civilian remains, page 62: Nonconcur with the observation since evacuation of remains by a medical unit is contrary to medical doctrine. The II Field Force Surgeon's Office has been contacted and is taking appropriate action.

b. Reference item concerning use of the Mortar Aerial Delivery System (MADS), paragraph 2a (2), page 30: USARV LTR, subject: Mortar Aerial Delivery System (MADS), dtd 4 September 1966, authorized USARV Aviation Units to fabricate and employ MADS at the discretion of the unit commander. This authorization was derived from approval by DA, OACSFOR, without safety certification, for local fabrication and use in RVN. Although CG, 25th Infantry Division has determined the system to be ineffective for use in his division, the CG, 1st Cavalry Division (Airmobile) has recently completed an extensive study, dtd 19 July 1967, in which he concludes that the system is effective and recommends the study be forwarded to Combat Developments Command. The 1st Cavalry Division (Airmobile), in its study, arrived at means of overcoming the factors which decrease the accuracy of the system, e.g., air speed, altitude, moving targets, etc. The 1st Cavalry study on MADS is presently being staffed at this headquarters.

c. Reference item concerning PSYOPS equipment, paragraph 1j (7) (b), page 24. All multilith presses have been issued. The plate makers have been shipped via surface transportation from Hawaii. Loudspeaker sets are arriving at the rate of 12 per month. The 25th Infantry Division is scheduled to receive three sets o/a 30 October 1967.

d. Reference item concerning effect of river tides upon search operations, page 40: Concur with recommendation. The Naval Oceanographic Office is presently compiling and analyzing data to improve prediction of tidal effects on rivers in South Vietnam. The most accurate information currently available is contained in the Tide Tables for 1967 published by COMNAVFORV, APO 96214. Tables of expected arrival time of tides for September and October at four locations are in the process of being distributed.

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AVHGC-DST (19 Aug 67) 2d Ind
SUBJECT: Operational Report-Lessons Learned for the Period Ending 31 July 1967 (RCS CSFOR-65) (U)

e. Reference item concerning vehicular maintenance, paragraph b (1), page 62: Concur. Daily before and after operations checks, and periodic stand downs for supply and maintenance should be held whenever the tactical situation permits.

f. Reference item concerning vegetables, paragraph 4, page 64. Concur. Perishable subsistance is inspected by Class I Supply Point personnel. Items of a questionable quality are inspected by a veterinarian who determines suitability for consumption.

3. (U) Unit will be notified of actions and comments by routine indorsement which returns this report.

FOR THE COMMANDER:

E. L. KENNEDY
CPT AGC
Asst AG

1 Incl
nc

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GPOP-DT(19 Aug 67) 3d Ind (U)
SUBJECT: Operational Report for the Quarterly Period Ending 31 July 1967 from HQ, 25th Inf Div (UIC: WALXAT) (RCS CSFOR-65) (U)

HQ, US ARMY, PACIFIC, APO San Francisco 96558 27 OCT 1967

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D. C. 20310

1. This headquarters has evaluated subject report and forwarding indorsements and concurs in the report as indorsed.

2. Reference Part I, page 12, paragraph 15, Air Conditioning:

a. The following communication assemblages have been authorized air conditioning when deployed in Vietnam:

AN/GRC-26	AN/MRR-8	AN/TCC-61
AN/MCC-3	AN/MSC-29	AN/TRC-108
AN/MCC-6	AN/MSC-31	AN/TRC-109
AN/MCC-9	AN/MSC-19	AN/TRC-110
AN/MCC-17	AN/MSC-32	AN/TRC-117
AN/MRC-54	AN/MTC-1	SB/611
AN/MRC-69	AN/MTC-3	SB/675
AN/MRC-73	AN/MTC-7	
AN/MRC-102	AN/TCC-60	

b. USAMC has provided the following shipping dates for air conditioner FSN 4120-930-5700. This is an 18000 BTU unit, generator powered, 3/4-ton trailer mounted, and includes ducts, fire extinguishers, ground rods and spare parts.

September - 146	January - 300
November - 300	February - 300
December - 294	March - 242

c. Additionally, all new shelter-mounted communication assemblages being deployed to Vietnam, as replacements for outmoded equipment, will have air conditioning equipment.

FOR THE COMMANDER IN CHIEF:

K. F. OSBOURN
MAJ, AGC
Asst AG

1 Incl
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~~E~~	~~Radio Relay Diagram - MANHATTAN~~
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	Withdrawn, Hqs, DA
G	Quick Erect VHF Antenna
~~H~~	~~VHF Relay - Nui Ba Den~~
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Confidential

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TASK ORGANIZATION

1st Brigade, 25th Infantry Division

4th Bn, 9th Inf
2d Bn, 14th Inf
4th Bn, 23d Inf (Mech)
7th Bn, 11th Arty (DS)

3d Brigade, 4th Infantry Division

2d Bn, 12th Inf
2d Bn, 22d Inf (Mech)
3d Bn, 22d Inf
2d Bn, 77th Arty (DS)
Trp C, 1st Sqdn, 10th Cav
Co C, 4th Engr Bn

25th Division Artillery
25th Division Support Command
3d Sqdn, 4th Cavalry (-)
25th Aviation Bn
65th Engineer Bn (-)
125th Signal Bn (-)
588th Engr Bn (DS)
25th MP Company
25th MI Detachment

2d Brigade, 25th Infantry Division

1st Bn, 5th Inf (Mech)
1st Bn, 27th Inf
2d Bn, 27th Inf
1st Bn, 8th Arty (DS)

1st Brigade, 9th Infantry Division

(OPCON to 25th Inf Div from 1 - 18 May 1967)
4th Bn, 39th Inf
2d Bn, 47th Inf (Mech)
Co A, 2d Bn, 34th Armor
1st Bn, 11th Arty (DS)
Btry B & C, 2d Bn, 13th Arty (Atch)
Btry D, 5th Bn, 2d Arty (Atch)

Appendix 1 to quarterly report ending 31 Jul 67

CONFIDENTIAL

NARRATIVE REPORT

1. GENERAL.

Probably the most important lesson to be learned by a Division Signal Battalion Commander and his staff when operating in an Internal Defense (ID) environment is that there is an increased need for flexibility and ingenuity, and that "fixed" ideas on missions, tasks and unit employment "by the book" should be avoided. The desire to maintain normal internal command relationships and tactical integrity for ease of administration and logistics within the signal battalion must not be allowed to hinder readjustment and/or realignment of missions, functions and even organization and equipment when there are clear gains to be made operationally by so doing. A Division Signal Battalion Commander will be faced with tasks that are not stated or even implied on any TOE mission statement, and on the other hand, there will be a number of tasks normal to the battalion mission which will be non-existent in the ID environment. Just as any other tactical command tailors its combat force to the specific tasks to be accomplished, so must the Division Signal Battalion tailor and allocate its combat support resources to produce signal communication elements appropriate to the differing or additional tasks peculiar to the ID environment. It is, more often than not, unrealistic to attempt deployment or utilization of the signal battalion in strict accordance with standard TOE organization. The standard company, platoon and section structure of a division signal battalion is designed to provide the optimum organization for signal support of the division when deployed on a conventional or nuclear battlefield. In an ID environment the division rarely assumes the standard headquarters configurations or the normal deployment of subordinate units, and when the organization for combat of the tactical unit being supported is altered significantly, it follows that the signal battalion must be prepared to alter its structure and employment accordingly.

2. SIGNAL BATTALION EMPLOYMENT.

The most significant factor having a direct bearing on the division signal battalion employment is the typical posture of division headquarters and subordinate elements in the ID environment.

a. Division Headquarters - The conventional doctrine of two or three echelons (command posts) of the division headquarters moving at frequent intervals does not normally apply. In the 25th Division all Headquarters elements are consolidated in a base camp at Cu Chi to obtain security and economy of force against insurgent activity. This base has grown into a complex requiring utilization, at least initially, of a good percentage of the signal battalion's resources. The base is a field CP as well as a camp, post, or station, and looked at from either aspect has communications requirements far over and above those normally associated with the capabilities of a division signal battalion. When the division headquarters does move out to a forward location, little if any of the communications support at Cu Chi can be turned off.

While area type signal support furnished by Signal Brigade troops is

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quite extensive and fully capable now of handling the internal administrative and logistics communications needs of the base camp to include both divisional and tenant units, the division signal battalion remains highly committed at the base camp. The internal base camp command control, fire support, and combat support communications must all be maintained by the signal battalion for the security of the base. The division headquarters as well as all of the subordinate units retain and continue to operate Tactical Operation Centers (TOC) and Fire Support Elements (FSE) at their base camps when they move their CP's out for an operation. In effect then, all tactical communications are "duplicated" rather than "moved" when headquarters move to forward locations.

b. Subordinate Elements - In the ID environment the "typical" employment of subordinate elements is to establish battalion or reinforced company-sized fire support bases from which the maneuver elements operate. These bases, normally battalion size are relatively widely dispersed, and must be tied together with a completely reliable and responsive communications network in order to insure quick reaction in response to enemy activity. This "quick reaction" is the key to all offensive-defensive actions in this type environment. It requires essentially that all resources, infantry, artillery, mechanized units, Army Air, tactical USAF, etc., be brought together quickly in a coordinated effort to meet a threat or take advantage of enemy activity. This can only be done through a comprehensive communication system. We have learned that, while the organic single channel radio is highly effective for immediate tactical control below brigade level it is not sufficient for the complex planning and coordination needed to tie in all the different and varying command and fire support elements involved in an area of operations. We have found it expedient and extremely worthwhile, to provide signal support teams down to battalion and fire support base rather than "cutting off" Signal Battalion support at the brigade headquarters level.

c. It is the policy in this battalion that neither equipment nor personnel are kept in reserve when they can be profitably employed. A piece of equipment standing idle in the motor pool can not be relied upon to be ready for commitment. The only way to insure electronic equipment is operable is to operate it. At all multichannel VHF sites the reserve or back-up equipment is put on the air to provide secondary links or alternate routes. This serves a double purpose: not only do we have immediate back-up to all of our primary links, but also we know the actual status of our equipment and personnel. We spot weak areas in new people while they are operating on the back-up circuits and can bring up their proficiency to insure they are able to handle their job. This same approach is used for our RATT teams, comm center personnel, and switchboard teams. The personnel and equipment, which will be supporting units which are not in the field today, such as the Division Fwd CP, the Support Command, Division Artillery, etc, are operational today either at Cu Chi or in support of other units to insure that they are, in reality, ready to go if we move to the field tomorrow.

3. SIGNAL BATTALION REORGANIZATION.

Shortly after joining the division, I recognized the fact that keeping tactical integrity according to TOE breakout of equipment and personnel in the signal battalion could lead to equipment and personnel of certain elements lying idle while other elements were over-committed, or while a requirement for added communication was not being met. It was for this purpose, to get the maximum use

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OPERATIONAL REPORT - Lessons Learned

From 125th Signal Battalion

25th Infantry Division

For the Period 1 May - 31 July 1967

out of all available resources, that shortly after assuming command, I caused the 129th Signal Battalion to be reorganized along functional lines by communication mission rather than in accordance with the "unit support" concept upon which our current TOE is based.

a. In essence what has been done is to consolidate all like communication resources in men and material in the following functional catagories regardless of TOE company:

(1) Communications systems technical control

(2) AM and FM radio

(3) Communication Center

(4) Teletypewriter terminals

(5) Messengers

(6) VHF radio and carrier terminals

(7) VHF radio relays

(8) Telephone switchboards

(9) Telephone installation and repair

(10) Cable installation and maintenance

b. This reorganization has enabled me and the battalion S-3 to have complete cognisance at all times of all resources committed and available. The chart attached at Tab A indicates the total resources of this battalion, how they have been organized functionally, and status of employment. I believe this chart, with accompanying remarks, explains fully the utilization of every man of my command. Tailored forces made up of the particular type teams required are provided for each specific mission. In this way full use is made of all our capability, regardless of TOE stated mission, to provide the most reliable and dependable communications possible. Use of resources in this manner has enabled the battalion to do many things which are necessary in this environment, but which are not called for in any specific mission statement.

c. At Tab B are the organization charts that show the new reorganization. To the maximum extent possible reorganization was accomplished by attachment of personnel and equipment, by TOE paragraph number, from one company to another. It should be noted that this battalion can quickly revert to normal TOE organization simply by rescinding attachment orders. Only in three cases were personnel and equipment within paragraphs split-up. They were paragraph 01 in TOE 11-37E and 11-39E and paragraph 09 in TOE 11-39E. This was necessary in order to attach 13 additional powermen to "B" Company (VHF Carrier) which acquired all the AN/MRC-69's, each containing power units. This permitted equitable distribution of powermen in the units where the majority of generators were located. Paragraph 09 TOE 11-39E had to be split-up in

order to separate the switchboard personnel and equipment from the comm center personnel and equipment which were placed in "A" Company.

d. Consolidated RAM - By combining all organizational signal maintenance teams at battalion level (HHD), greater flexibility and utilization of signal repairmen and equipment have been achieved. We have more flexibility because signal maintenance teams can be tailored to fill specific needs during tactical operations without impairing the maintenance operation at base camp. We get maximum utilization of men and equipment by pooling our resources so that more experienced men can guide and train new men, and all repair and test equipment is available to be used to the maximum extent possible in support of all elements of the battalion. The capability to provide maintenance contact teams consisting of the number and type repairmen needed is retained in this reorganization.

e. Consolidation of teletypewriter and cryptographic repairmen - Teletypewriter and cryptographic repairmen have been detailed for duty in the division comm center and distribution authority respectively. This practice provides on site repair and maintenance thereby reducing equipment "downtime" and also reduces the amount of equipment handling necessary for repair. As the comm center facility is expanded, the teletype repair facility will be shifted to the immediate vicinity of the communication center, since that section has the great majority of the battalion's teletypewriter capability under the new reorganization.

f. Consolidated PLL - This battalion has asked for and received permission to retain its consolidated PLL. All electronics, automotive, small arms, quartermaster, chemical and engineer PLL items are maintained under the supervision of the battalion S-4. Here again we feel we have made more efficient use of personnel and materiel resources. The battalion maintains approximately 950 line items in its PLL section. PLL stockage is determined by equipment density and demand data for the whole battalion in keeping with the provisions of AR 735-35. The PLL section is located in close proximity to maintenance facilities and unit supply sections, and is readily accessible to all maintenance and supply personnel. Authorized running spares are carried on equipment as directed.

4. SYSTEMS CONTROL (SYSCON).

Great emphasis is placed on systems control by the 125th Signal Battalion. All communications are planned, directed and coordinated by a central systems control element operating under the battalion S-3. The systems control is located normally with the main command post. All directives concerning communication operations pass from the SYSCON to operating elements for implementation through one or more technical control centers (formally called facilities control). Technical control centers are established as required at hubs of communication. The primary tool of the technical control centers is the SB-611 patching central which permits limited testing of circuits as well as routing or re-routing of circuits in accordance with directives of the SYSCON. In order to man and train personnel to work together as a cohesive, well coordinated controlling element, all of the technical control personnel of the battalion are consolidated in one unit, and they are a seperate entity not a part of another element, such as VHF, comm center, or radio, etc. They are

a "neutral" directing group under the direct control of the S-3 through his SYSCON. Good solid control communications have been found to be essential for maximum performance of the communication control mission. While the 125th Signal Battalion uses the standard "channel 12" as the primary SYSCON - TECHCON control system, we have found it essential to also utilize an FM radio net as well. We have established an SOP that all signal elements in direct support of divisional elements have FM radio communications via the battalion FM command net to the technical control center coordinating their operations. This system has paid high dividends on those many occasions when preplanned locations have been changed at the last minute or when preplanned frequencies have not been satisfactory. An FM radio is sent with each VHF team. See Tab C.

5. MULTICHANNEL VHF.

The 125th Signal Battalion employs a very extensive multichannel VHF network. Echelon of command is not the guide for employment - rather the criteria for deployment is "will use of multichannel VHF give better reliability and responsiveness". It is standard practice to employ VHF at virtually all fire support bases to permit direct telephone links for fire support coordination rather than relying solely upon single channel FM radio. Diagrams depicting typical multichannel VHF networks for operations Junction City, Manhattan and the Monsoon Campaign are attached at Tab D through F. It should be noted that since operation Junction City we have increasingly made use of at least one secondary or alternate link in addition to the primary link. These secondary routings not only increase the reliability and survival of the network in event of equipment loss, but also gives us built in flexibility to meet additional or new circuit requirements to almost any point in the system by means of "strap throughs". Some technical lessons learned or, in some cases, relearned follow:

a. A modification of the old standby "quick mount" or "gun erect" antenna erection system has proved invaluable especially when operating with maneuver battalions and or fire support bases where movement is necessitated relatively often. By using a base plate mounted on top of the shelter S-141, a fifteen foot antenna mast can be erected and the system put on the air in 15 to 20 minutes. With few exceptions, due to the relatively flat terrain in which this unit is operating, this height of approximately 26 feet (shelter roof is 11 feet) is more than adequate for high quality transmission. Attached at Tab G is a photograph of a typical installation.

b. The use of "D" band frequencies and equipment has proven to be more satisfactory than "B" or "C" band. While the tuning of "D" band appears to be more critical, once lined up, "D" band has proven to be better over short distances in flat terrain, and does not appear to be as susceptible to interference from helicopters flying through the beam.

c. Operating VHF in heavy jungle areas presents special problems. We have found only one successful answer and that is to get the fly swatter above the canopy. This is not always as easy as it may sound. Maximum training must be given to all VHF teams in the erection of 60 feet masts in difficult, close terrain and in field expedients to raise antennas above the tree line. Getting even one end of the link well above the tree line increases chances for

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success. During the first phases of operation Junction City, VHF to units operating in Northern Tay Ninh Province (War Zone "C") were either non-existent or very marginal even with 60 foot antennas on both ends. During the second phase of Junction City a radio relay site was established on Nui Ba Den Mountain at an altitude of approximately 2300 feet. Activation of this relay site resulted in obtaining circuits of excellent quality to all units in the northern zone. In order to establish a site at Nui Ba Den which is inaccessable except by helicopter, equipment from two AN/MRC-54's was dismounted and installed in a bunker. See Tab M.

d. We have found that establishing a standard height for antenna masts is not always wise. Whereas height was an extreme asset when operating in the Northern Tay Ninh Province it proved to be a detriment when operating in other areas. In Hau Nghia Province, as an example, where the terrain is extremely flat and there are few heavily wooded areas, we found that the lower we kept the antenna the better. Links operating on a 45 or 60 foot antenna mast picked up excessive noise and interference. When 15 foot mast were substituted circuit quality improved immeasurably. The lesson relearned is that there is no set guide for antenna height - it depends on the situation and the terrain.

e. It has been found that the location of VHF rigs within a CP location is very critical. The locating of VHF rigs near helipads has resulted in noisy and unreliable VHF communications each time a helicopter lands or takes off. For best results, the sites should be located away from the helipad on the edge of the CP nearest the distant VHF terminal.

f. The overheating of VHF and teletype equipment in communication shelters is a continuing serious problem within the Battalion. This excessive heat reduces the operating efficiency of the VHF equipment, especially in the power supply section of the AN/TRC-24, in the TA-182s, and in the AN/TCC-7's. This results in reduced telephone and teletype circuit quality and in increased equipment maintenance problems. Air-conditioners for communication shelters are vitally needed and should be standard equipment for this theater of operations.

g. The AN/MRC-112 (4-channel radio relay set mounted in a 1/4 ton vehicle and trailer) has proven to be a very useful piece of equipment, due to its air-transportability. The set proved highly reliable during MANHATTAN for employment in support of artillery fire support bases. While more light air-transportable VHF equipment is highly desirable, the AN/MRC-112 is <u>not</u> the final answer. Due to its conflict with the frequency band of the new VRC-12 series radios, employment of any great number of these sets would give serious frequency interference problems. To meet the continuing requirement for light equipment a twelve-channel VHF terminal in a 3/4 ton trailer (AN/MRC-34.5) has been locally configured and has proved invaluable (Tab I). We have also found that the AN/MRC-69 can be easily transported by the CH-47 helicopter (Tab J).

h. Training must include a great deal of practice and drill in lowering and erecting antennas, including 45' and 60' masts, during hours of darkness. Enemy mortar and recoiless rifle attacks are invariably made during hours of darkness and destroyed or damaged antennas must be replaced or repaired immediately after cessation of hostile fire. We can not afford to wait until morning.

6. AM RADIO.

a. The only lesson learned in this area is that there is normally no need for a number of division RATT nets in this environment. The increased range of FM radio, and the more extensive use of teletype via VHF may have some bearing on this, but regardless of the reason, we have found that one RATT net is adequate to handle the traffic generated and to give us a reliable back-up for our VHF teletype. In this regard, workable HF frequencies are difficult to come by in this part of the world, and it is better to have one net operating well for the major portion of the 24 hour period than to attempt to have two or three nets operating, none of which are very efficient.

7. FM RADIO.

FM radio is the primary means of communication used by commanders for immediate command and control. Some lessons learned in this area are:

a. Nets

FM nets are more or less standard. We have, however, found it very worthwhile to place a station, operated by our division AAE element, into the secure FM net with II Force AAE and all aviation battalions in our area. This net is actually an aviation group net. Coordination of aerial moves and requests for aviation support have been greatly expedited by this net.

b. Command and Control Aircraft

In this environment commanders of necessity must travel by air, and if they are to be "commanders" they must have sufficient communications to allow them to influence the action while in flight. This division utilizes UH1D as a command-control aircraft for the principal commanders. The distribution of these ships and the radio equipment contained in each are shown on Tab K. These commanders are habitually required to communicate with units two, and at times three command levels below. For example, the division Commander and ADC's communicate as much with battalion commanders as with brigade commanders, and in the course of a single operation, with as many as six or seven different units extensively. We have found it expedient to mount RT-246's in addition to the ASC-6, 10's, or 11's normally found in the command and control ships to give commanders the flexibility required. One of the radios in the ASC console is normally kept on the command net of the commander in the aircraft at all times, while the second set is kept on the command net of the next higher command. The RT-246 is then free to be used to switch to any other unit frequency as required.

c. Retransmission

The AN/VRC-29 has proven to be highly valuable for retransmission. Retransmission with this set is highly reliable yet simple to operate. This division operates four (4) retransmission station; the division command net; the division artillery command net; the 3/4 Cavalry Squadron command net; and the 3/4 Infantry Brigade command net. The Infantry Brigades normally operate their own retransmission stations, however, in

the case of the 3/4 Inf which operates in northern province, the signal battalion operates a station for them from our location on Nui Ba Den mountain. We also provide this support for the 3/4 Cavalry Squadron to enable them to communicate with their long range patrol elements operating in the jungle area to the north. The 125th Signal Battalion retransmission station and FM control station are located on the only piece of high ground in the area, Nui Ba Den. All equipment, supplies, water, rations and POL must be airlifted in. The battalion has fabricated a compact communications package by modifying a CONEX container. This container has racks for four AN/VRC-49's and a VRC-46, and mounts for whip antennae and RC-292 antennae fixed to the sides. Generators, batteries and rectifiers to provide sufficient power are also included. The photographs attached as Tab L show the retransmission station and also gives an idea of the ruggedness of the terrain of Nui Ba Den.

d. Radio Wire Integration

Excellent results have been obtained utilizing FM radio wire integration (RWI) in the past two months. It has been found to be exceptionally useful for the G-5 people who travel consistently to villages and hamlets where no communications other than their own radio exist. A locally fabricated electronic "box" utilized by the 121st Signal Battalion in place of the AN/GSA-7 has been adopted by the 125th as standard for RWI use. See Tab M.

e. FM Radio in Jungle Terrain

The problems of transmission with FM radio in jungle terrain are not as serious when using the AN/PRC-25 or VRC-12 series radios as they were when the PRC-10 and AN/GRC-3 through 8 series radios were employed. It is, however, still prudent to get the antenna above the jungle canopy when possible. RC-292 antenna heads mounted on a 60' VHF mast were used very effectively during Operation JUNCTION CITY.

f. Forward Air Control (FAC) Air-Ground Communications

The FM radio AN/ARC-44 installed in the Air Force owned O-1 "Birddog" aircraft used by Forward Air Controllers (FAC) as observation and fire control aircraft does not have the frequency or channelization range of the AN/VRC-12 series or AN/PRC-25 radios. As a result, it is often difficult and sometimes impossible for the FAC to communicate with a tactical unit being provided close air support. To solve this problem, the 125th Signal Battalion has mounted an AN/PRC-25 in the plane to supplement the existing VHF and UHF communications. The following requirements were made by the Air Force before the final product was acceptable to them:

(1) The power must be derived from the plane's electrical system.

(2) The pilot's existing helmet with headset and microphone must be compatible with both the plane's communication system and the new PRC-25 system.

(3) The pilot must be able to monitor both systems at the same time, keying one system or the other at will.

Using a 24-volt wet cell for power, a two-way switch and a 180

ohm resistor to match . . impedance, a system has been . .ated to integrate the two systems, i.e. the AN/PRC-25 with the existing radio system. Tab N depicts the arrangement photographically. 84

8. SWITCHBOARD.

The 25th Infantry Division, as it is employed tactically in a counterinsurgency environment, has established a large base camp at Cu Chi to support combat operations. Experience at Cu Chi Base Camp shows that the Division has, for all intents and purposes, developed a need for a post signal type cable system and requires comparable switchboard service.

a. Initially, the 125th Signal Battalion operated the Lightning Main switchboard, handling 100 local telephones and 50 to 80 trunk circuits. It was quickly apparent that the TOE Division Main switchboard, the MTC-3, could not handle the load and a AN/MTC-1 was "found" to do the job. Establishment by the 86th Signal Battalion of a AN/MTC-9 has relieved the division signal battalion of most of the administrative load. At present Lightning Main switchboard has 55 local lines and 81 trunks lines. The total trunks expand to over 100 circuits when all major subordinate units displace from Base Camp. The lesson learned is that the division requires one AN/MTC-1 switchboards. A list of subscribers normally handled at Division Base Camp is attached as Tab O. Tab P shows the trunks handled by the division board.

b. A major lesson learned has been that even with heavy support from "Army" signal troops at base camps there is still an inordinately high requirement placed upon the division signal battalion's switchboard capability both in equipment and manpower. We have found that when we displace Division Headquarters to a forward CP location; when Division Arty and Support Command move out to forward locations; and when all brigades are out of base camp, we still have an extremely heavy base camp requirement which can not be handled by the "area" switchboard. This is due to the fact that all these units leave sizable elements in the base camp and all continue to require their tactical communication for security and administration of the base. In addition, they all require extensive tie in to the forward location of their units.

9. SOLE-USER CIRCUITS.

The need for quick response has increased considerably the requirement for sole-user (point-to-point) circuits. More people are now directly involved in operations on an immediate basis. That is, the need for sole-user circuits is no longer limited to the G-2/3 and FSE types. Here in the 25th Division, the G-3 Air, the Army Aviation Element (AAE) and the USAF Air Liaison Officer (ALO) all require extensive point-to-point communications. Tab Q depicts a typical sole-user telephone chart for circuits terminated at division. It should be noted that the type of termination utilized by elements of division headquarters varies not only in accordance with the number of sole-users terminated, but also with the desire of the user. For example, the G-2/3 operating the DTOC prefers that the signal battalion operate the DTOC switchboard, and we therefore provide an SB-86 and operators to handle his 28 sole-user lines. The only line not terminating in this board is the sole-user to II Force TOC (equivalent to Corps). The Artillery people of the FSE and the aviation personnel of the AAE prefer to have a switchboard operated by there

own people. We have therefore provided them with an SB-22, and in addition, given both a means of utilizing power ring on their phones for convenience. The G-3 Air and the USAF ALO prefer to have their sole-users terminated on telephones. We have provided them with locally fabricated consoles which incorporate power ring and a visual signaling device for each phone. The varied type installations are depicted at Tab R. It should be noted that each of these installations is duplicated in a hardened command bunker and a building here at Cu Chi, as well as in vans for use at forward CP locations. In addition to sole-user circuits from division headquarters there are considerable sole-user requirements within division artillery and brigades. Typical requirements are shown on the chart at Tab S.

10. COMMON-USER CIRCUITS.

The common-user telephone network continues to be quite an extensive one in this environment. A lesson learned is that we must be careful to avoid downgrading the common-user system to an unacceptable degree, due to the heavy need for sole-user circuits. Unless he plans and installs enough VHF links to satisfy all requirements, a signal officer may very well find himself "out of" circuits for an effective common-user network. It should be noted that for units below brigade, one or two common-user trunks are normally provided between that unit and its parent unit switchboard. This is normally provided via cable when in base camp and over VHF when units establish combat base camps that can be supported by signal battalion teams.

11. CABLE AND WIRE INSTALLATION.

The Cu Chi Base Camp cable system was installed in three distinct phases. Phases I and II were carried out by the 125th Signal Battalion with some assistance from a cable platoon of the 39th Signal Battalion. Phase III was installed by the 2nd Signal Group.

a. Phase I construction initially involved 26 pair cable in the DTOC area and 5 pair cable to outlying units. Spiral 4 cable was also installed to all units that required sole-user circuits to the Division Tactical Operations Center (DTOC).

b. Growth requirements made expansion of the 5 pair cable system necessary. Phase II construction was initially a 26 pair tactical cable system designed to provide sole-user and common-user trunks and locals to all units in Cu Chi Base Camp. The Phase I and II system installed is depicted on the diagram attached as Tab T. A cable platoon from the 39th Signal Battalion assisted by setting cement poles and installing 25 pair commercial cable from the DTOC to the Division Wire Head. The platoon departed Cu Chi leaving several thousand feet of 25 pair commercial cable which the 125th Signal Battalion installed to major subordinate units of the Division. The Division Signal Battalion also installed a small amount of 100 and 200 pair cable underground. At the end of Phase II the Signal Battalion had installed the following cable within base camp in support of the 25th Infantry Division:

Spiral 4	15 Miles
26/25 Pr	22 Miles
50 Pr	3/4 Mile
100 Pr	1 Mile
200 Pr	1/3 Mile

c. Phase III is a sophisticated fixed plant cable system. It is designed to provide facilities for sole-user and common-user trunk circuits and a dial central office in support of the 25th Infantry Division. This cable system, constructed by the 267th Signal Company of the 2nd Signal Group, was finished 3 May 1967 and the cut-over of Division circuits is now in the final stages.

d. The lesson learned in cable and wire installation is that a requirement exists for more not less cable and wire construction in this environment, and the type of construction required is more sophisticated and semi-permanent. At one point in time, this battalion found itself with almost all of its wire and cable resources in material installed - and no sizable amount of cable on-hand. Had it been necessary at that time to install a forward division CP we would have been hard pressed to find the required cable. Reliance can not be placed completely on the "Army" signal support units. Their construction does not take into account enemy action, nor do they have the necessary "quick rehabilitation" capability needed for the tactical circuits. For this reason, the signal battalion must continue to install and maintain cable in base camps which are hardened (underground), and they must maintain the capability to rehabilitate these lines in good time when they are damaged due to any cause.

12. COMMUNICATION WITH ARVN AND OTHER RVN FORCES.

A major requirement in the ID environment is the ability to communicate effectively with a number of other forces in the division's Tactical Area of Interest (TAOI). This includes US advisors at province and sector headquarters, ARVN units and CIDG camps in the TAOI. A great deal of coordination is required not only to establish lines of communication but to keep up with the many changes constantly being made by these various outfits. Due to differing types of equipment at each place, tying in of all the necessary links so that all of the units can exchange information and, more important, call for assistance from each other in the way of artillery support, light fire support teams, USAF tactical air, and ground reaction forces is not an easy task. Tabs U through W show the primary communications provided in the 25th Division TAOI. In addition, all units are kept up to date on the FM nets of all other units and current SOI items to include authentication charts are interchanged.

13. MILITARY AFFILIATED RADIO STATION (MARS).

An added requirement not normally handled by a division signal

battalion in the field is the operation of a MARS Station for the welfare and morale of the command.

a. The 25th Infantry Division MARS Station, AB8AJ, has been operating over the last year and one half. The station comes under the operation control of the 125th Signal Battalion. The battalion provides the station with operating personnel and provides the maintenance capability for the radio equipment. Money to buy necessary radio equipment that cannot be obtained through military supply system is provided by non-appropriated welfare funds, and equipment is purchased out of country.

b. The 25th Infantry Division MARS Station is a 24 hour per day operation under the control of the Division MARS Director, and NCOIC, and five operators. These personnel, assigned to HHD of the Signal Battalion, are drawn primarily from the MOS 05C personnel or other battalion personnel with previous HAM experience.

c. The Division MARS Station averages over 1,000 phone patches in a month to CONUS, which is more than any other MARS Station in RVN. The 25th Infantry Division MARS Station serves not only the Division, but all personnel in the area.

d. During Operation JUNCTION CITY, the MARS facility was carried to the forward CP area to serve troops in the field simply by providing a direct circuit from the forward location to the MARS Station at Cu Chi for phone patches. The high quality of our VHF is attested to by the fact that several hundred calls were made over this line with excellent results.

14. SECURE LAND LINES.

It is believed that the 125th Signal Battalion is the first to have installed a secure land line circuit at a division level. Such a circuit was engineered and installed in order to expedite spot reports between the 372nd RR Company and the division G-2. The TSEC/KY-8 has been employed for this purpose utilizing spiral four cable as the media of transmission. Essentially, both TSEC/KY-8 sets are operated in the back-to-back (test) mode. The short back-to-back cable is replaced with spiral four of the required length. This system has proved to be virtually trouble free and produces an extremely high quality secure voice line.

15. AIR-CONDITIONING.

One lesson which we continue to learn over and over, but which no one does anything about officially, is that we need air-conditioning for our communication shelters. The problem we are experiencing is not new - we have been experiencing it in Vietnam for years - it is simply that our communications system is down-graded to a very great extent by the climatic conditions encountered here. Our carrier equipment, ringers, TH-5's, teletypewriter, etc., just will not give optimum performance under the heat and dust conditions existing here. The only acceptable answer is to reduce the temperature and keep the shelters closed - this means air-conditioning.

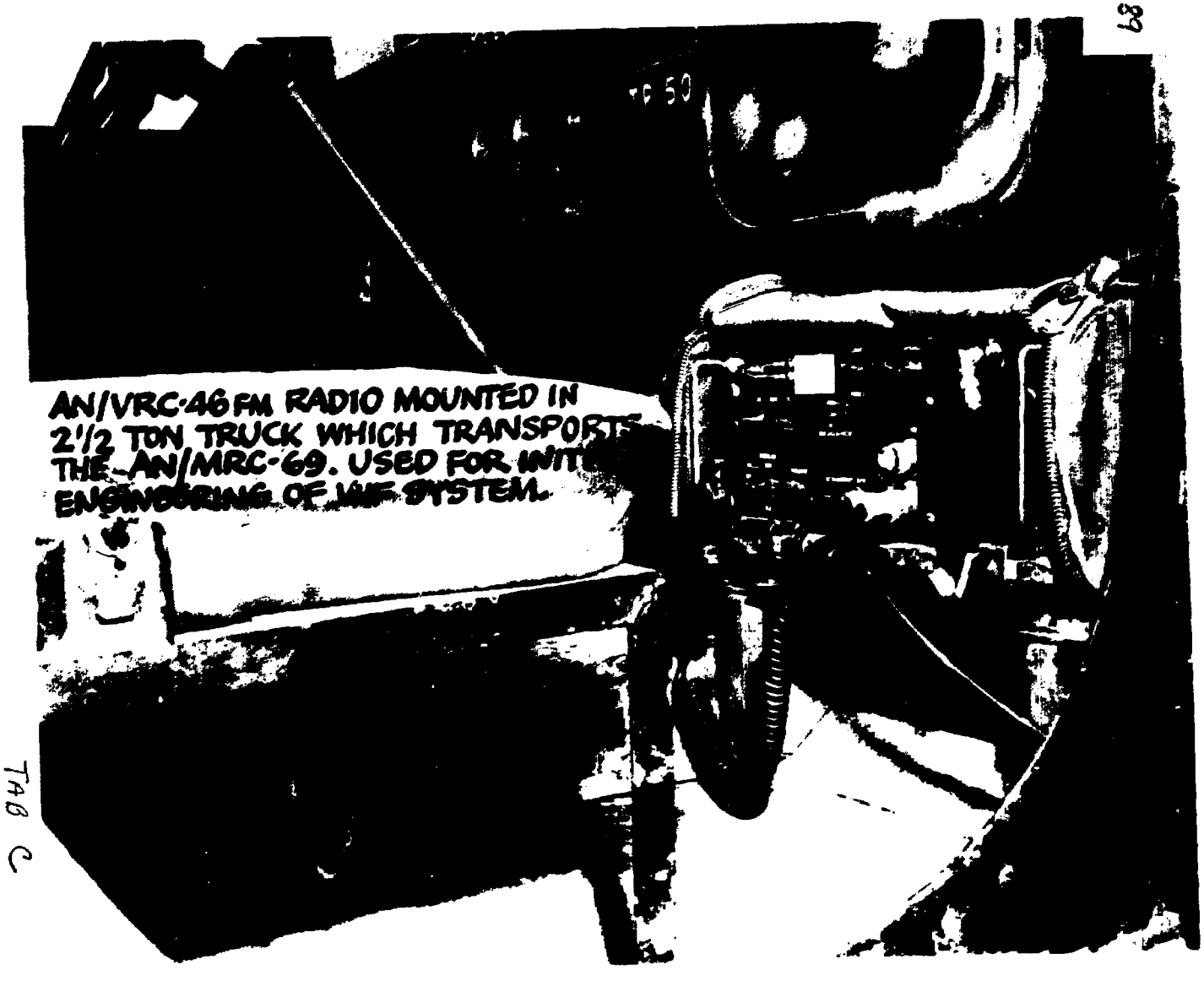
a. Where it is needed - In a division signal battalion, a number of critical assemblages contained in shelters require air-conditioning. A list of these assemblages is attached as Tab X.

b. What type - I am not a climate control engineer and therefore can not claim to have a technical answer as far as BTU rating requirements are concerned. I'm sure it would vary considerably for each different type shelter. However, it should be quite obvious that we need a relatively light, self contained unit that can be mounted externally on the shelters with a reasonable power consumption rating in line with the generator power normally available. It appears to me that a standard commercial air-conditioner of approximately 18,500 BTU operating on 110 or 220 volts at 12 to 15 amps would do the job very well. What we do not want is a seperate large unit requiring a trailer to haul it. We do not have the prime movers to haul extra trailers, nor would we have the driver, mechanics, etc. that would be needed if extra prime movers were made available. The guide line on this should be - keep it simple.

16. PROTECTION FOR SIGNAL SITES.

The insurgents capability to bring indirect and direct fire upon any of our signal sites has been demonstrated on numerous occasions. Maximum digging in, bunkering of equipment, and provision of personnel bunkers are essential. Typical protected sites employed by this battalion are depicted by the photographs attached as Tab Y. It is SOP in this battalion to send a good size wire and cable team with each direct support signal team. These teams are utilized, after the wire/cable system is installed, to assist VHF, radio, and comm center teams in the construction of equipment and personnel bunkers.

Louis G. Mathern, Jr.
LOUIS G. MATHERN, JR.
LTC, SigC
Commanding



AN/VRC-46 FM RADIO MOUNTED IN 2½ TON TRUCK WHICH TRANSPORTS THE AN/MRC-69. USED FOR INITIAL ENGINEERING OF VHF SYSTEM.

TAB C

QUICK ERECT VHF ANTENNA
SECURED FOR MOVEMENT

10

TAB J

TAB G